



JAN 31 2020

Monroe Energy, LLC
4101 Post Road
Trainer, PA 19061
(610) 364-8000

212

42-045-00070

PA 000293037

January 30, 2020

FedEx: 7775 6400 1148

Mr. James Rebarchak
Air Quality Program
Commonwealth of Pennsylvania
Department of Environmental Protection
2 East Main Street
Norristown, PA 19401

Re: Monroe Energy, LLC – Trainer Refinery
40 CFR 60, Subpart J and Ja Semiannual Compliance Report
Reporting Period: July 1, 2019 – December 31, 2019
Title V Operating Permit No. 23-00003

Mr. Rebarchak:

In accordance with 40 CFR 60, Subparts J and Ja, Monroe Energy, LLC's Trainer Refinery hereby submits this semi-annual compliance report for the reporting period of July 1, 2019 to December 31, 2019.

Should you have any questions or comments regarding this report, please contact me at (610) 364-8399.

Sincerely,

Matthew Torell, P.E.
Environmental Leader

- Attachment 1: Responsible Official Certification
- Attachment 2: Facility Applicability
- Attachment 3: Excess Emission and Monitoring System Performance Summary Report
- Attachment 4: Excess Emissions and Emission Limit Exceedances
- Attachment 5: CEMS Certification/ Audit Details
- Attachment 6: Reportable Discharges per 60.108a(c)(6)
- Attachment 7: Daily Drift Test Results for the FCCU SO2 Analyzer
- Attachment 8: Detailed CEMS Downtime

cc: Office of Air Enforcement & Compliance Assistance (3AP20)
U.S. EPA, Region III
1650 Arch Street
Philadelphia, Pa 19103-2029
Fedex: 7775 6407 8274

Bcc: \\TRN-FS01\shared\HSE\!ENVIRONMENTAL\10 AIR\03 REPORTS\3.12 Semi-Annual NSPS Ja
Report\2019\2H2019



Monroe Energy, LLC
4101 Post Road
Trainer, PA 19061
(610) 364-8000

Attachment 1: Responsible Official Certification

Responsible Official Certification

Based upon information and belief formed after a reasonable inquiry, I, as a responsible official of the above-mentioned facility, certify the information contained in this report is accurate and true to the best of my knowledge.

A handwritten signature in blue ink, appearing to read "MS", written over a horizontal line.

Mark Schuck,
VP, Refinery Operations

1/30/2020

Date

Attachment 2: Facility Applicability

NSPS Subpart J

Fluid Catalytic Cracking Unit (FCCU)

The FCCU (Source ID 101) is subject to NSPS Subpart J. The FCC control devices include a CO Boiler, an Enhanced Selective Non-Catalytic Reduction Unit (ENSCR), an electrostatic precipitator, and a wet gas scrubber (WGS). In accordance with Subpart J, the WGS is equipped with a CEMS to measure CO and SO₂.

On November 22, 2005, the facility received approval from U.S. EPA for an Alternative Monitoring Plan (AMP) for Opacity in lieu of the requirement to install and operate a Continuous Opacity Monitoring (COM) System on the FCCU WGS stack. The AMP requires the refinery to monitor WGS liquid-to-gas (L-to-G) ratio (must be above 0.08) to continuously demonstrate compliance with the limits established during performance testing conducted in 2006 and 2007.

- **CMS Data:**

See Attachment 3 for a summary of the CMS downtime and excess emissions data in accordance with 40 CFR 60.7 (c)-(d) for this reporting period. As required by 40 CFR 104(c)(4)(vi), the results of the daily drift tests are included in Attachment 7 for the SO₂ analyzer.

- **Excess Emissions Reporting:**

There were no reportable discharges that occurred during this reporting period.

NSPS Subpart Ja

Main Flare

Monroe Energy operates a Main Flare (Source ID 103) that became subject to NSPS Ja on November 11, 2015. This flare is equipped with a flare gas recovery unit (FGRU) and maintains continuous monitoring equipment (i.e. flow, total reduced sulfur (TRS, H₂S) in accordance with the regulation.

- **CMS Data:**

See Attachment 3 for a summary of the H₂S and TRS CMS downtime and excess emissions data in accordance with 40 CFR 60.7 (c)-(d) for this reporting period. There were no exceedances of the 162 ppm H₂S on a 3-Hr average limit during the reporting period.

- **Reportable Discharges per 60.108a(c)(6):**

There was one reportable discharge that occurred during this reporting period, the Root Cause Analysis is included in Attachment 6.

Sulfur Recovery Unit (SRU)

Monroe Energy operates two Claus sulfur recovery units. These units are permitted together as Source 102 (Claus Sulfur Recovery Plant) in the facility's Title V Permit. The SRU became subject to NSPS Ja on November 11, 2015 when the vent from the Sour Water Storage Tank was routed from the Sour Gas flare (which was subsequently shut down) to the SRU incinerator. The SRU is equipped with a CEMS to measure SO₂ and O₂. Pursuant to the PADEP certified CEMS, there were 0 hours in which deviations from the 12-hr SO₂ corrected ppm limit occurred during the reporting period.

- **CMS Data:**

See Attachment 3 for a summary of the CMS downtime and excess emissions data in accordance with 40 CFR 60.7 (c)-(d) for this reporting period.

- **Reportable Discharges per 60.108a(c)(6):**

There were no reportable discharges that occurred during this reporting period.

Fuel Gas System

Monroe Energy operates two fuel gas systems subject to NSPS Ja. The fuel gas systems include the North Side Fuel Gas System and the South Side Fuel Gas System. In accordance with Subpart Ja, each fuel gas system is equipped with a CMS system for measuring the concentration of H₂S in the fuel gas before being burned in any combustion device.

- **CMS Data:**

See Attachment 3 for a summary of the CMS downtime and excess emissions data in accordance with 40 CFR 60.7 (c)-(d) for this reporting period.

- **Reportable Discharges per 60.108a(c)(6):**

There were no reportable discharges that occurred during this reporting period.

CMS Certification/Audit Details for all applicable sources can be found in Attachment 4.

Attachment 3: Excess Emission and Monitoring System Performance Summary Report

EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE SUMMARY REPORT

Pollutant (Circle One): SO₂ NO_x TRS H₂S **CO** Opacity

Reporting period dates: From July 1, 2019 to December 31, 2019

Company: Monroe Energy, LLC

Emission Limitation: 500 ppm (1-hour average)

Address: 4101 Post Rd, Trainer PA 19061

Monitor Manufacturer: Servomex

Model No.: 04900C1-4202

Date of Latest CMS Certification or Audit: 12/17/2019 (Linearity Test)

Process Unit(s) Description: FCCU

Total source operating time in reporting period ¹: 3798 hours

| Emission data summary ¹ | | CMS performance summary ¹ | |
|---|---------------------|---|---------------------|
| 1. Duration of excess emissions in the reporting period due to: | | 1. CMS downtime in the reporting period due to: | |
| a. Startup/shutdown | 0 | a. Monitor equipment malfunctions | 0 |
| b. Control equipment problems | 0 | b. Non-Monitor equipment malfunctions | 0 |
| c. Process problems | 0 | c. Quality assurance calibration | 0 |
| d. Other known causes | 0 | d. Other known causes | 12 |
| e. Unknown causes | 0 | e. Unknown causes | 0 |
| 2. Total duration of excess emissions | 0 | 2. Total CMS Downtime | 12 |
| 3. Total duration of excess emissions x (100) / [Total source operating time] | 0.00 % ² | 3. [Total CMS Downtime] x (100) / [Total source operating time] | 0.32 % ² |

¹ For opacity, record all times in minutes. For gases, record all times in hours.

² For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report described in 40 CFR 60.7(c) shall be submitted. See Attachment 3 for excess emissions information.

Note: On a separate page, describe any changes since last quarter in CMS, process or controls. **No changes to the CMS, process, or controls have occurred since last reporting period.**

EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE SUMMARY REPORT

Pollutant (Circle One): SO₂ NO_x TRS H₂S CO Opacity

Reporting period dates: From July 1, 2019 to December 31, 2019

Company: Monroe Energy, LLC

Emission Limitation: 50 ppm (7-day rolling average); 25 ppm (365-day rolling average)

Address: 4101 Post Rd, Trainer PA 19061

Monitor Manufacturer: AMETEK

Model No.: 921

Date of Latest CMS Certification or Audit: 12/17/2019 (Linearity Test)

Process Unit(s) Description: FCCU

Total source operating time in reporting period ¹: 3798 hours

| Emission data summary ¹ | | CMS performance summary ¹ | |
|---|---------------------|---|---------------------|
| 1. Duration of excess emissions in the reporting period due to: | | 1. CMS downtime in the reporting period due to: | |
| a. Startup/shutdown | 0 | a. Monitor equipment malfunctions | 0 |
| b. Control equipment problems | 0 | b. Non-Monitor equipment malfunctions | 0 |
| c. Process problems | 0 | c. Quality assurance calibration | 3 |
| d. Other known causes | 0 | d. Other known causes | 33 |
| e. Unknown causes | 0 | e. Unknown causes | 3 |
| 2. Total duration of excess emissions | 0 | 2. Total CMS Downtime | 39 |
| 3. Total duration of excess emissions x (100) / [Total source operating time] | 0.00 % ² | 3. [Total CMS Downtime] x (100) / [Total source operating time] | 0.94 % ² |

¹ For opacity, record all times in minutes. For gases, record all times in hours.

² For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report described in 40 CFR 60.7(c) shall be submitted. See Attachment 3 for excess emissions information.

Note: On a separate page, describe any changes since last quarter in CMS, process or controls. **No changes to the CMS, process, or controls have occurred since last reporting period.**

EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE SUMMARY REPORT

Pollutant (Circle One): SO₂ NO_x TRS H₂S CO Opacity

Reporting period dates: From July 1, 2019 to December 31, 2019

Company: Monroe Energy, LLC

Emission Limitation: 250 ppm (12 hour rolling average)

Address: 4101 Post Rd, Trainer PA 19061

Monitor Manufacturer: AMETEK

Model No.: Model 921

Date of Latest CMS Certification or Audit: 11/6/2019 (Linearity Test)

Process Unit(s) Description: Claus Sulfur Recovery Plant

Total source operating time in reporting period ¹: 4413 hours

| Emission data summary ¹ | | CMS performance summary ¹ | |
|---|---------------------|---|---------------------|
| 1. Duration of excess emissions in the reporting period due to: | | 1. CMS downtime in the reporting period due to: | |
| a. Startup/shutdown | 0 | a. Monitor equipment malfunctions | 0 |
| b. Control equipment problems | 0 | b. Non-Monitor equipment malfunctions | 0 |
| c. Process problems | 0 | c. Quality assurance calibration | 6 |
| d. Other known causes | 0 | d. Other known causes | 0 |
| e. Unknown causes | 0 | e. Unknown causes | 2 |
| 2. Total duration of excess emissions | 0 | 2. Total CMS Downtime | 8 |
| 3. Total duration of excess emissions x (100) / [Total source operating time] | 0.00 % ² | 3. [Total CMS Downtime] x (100) / [Total source operating time] | 0.18 % ² |

¹ For opacity, record all times in minutes. For gases, record all times in hours.

² For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report described in 40 CFR 60.7(c) shall be submitted. **See Attachment 3 for excess emissions information.**

Note: On a separate page, describe any changes since last quarter in CMS, process or controls. **No changes to the CMS, process, or controls have occurred since last reporting period.**

EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE SUMMARY REPORT

Pollutant (Circle One): SO₂ NO_x **TRS** H₂S CO Opacity

Reporting period dates: From July 1, 2019 to December 31, 2019

Company: Monroe Energy, LLC

Emission Limitation: 162 ppm (3 hour average)

Address: 4101 Post Rd, Trainer PA 19061

Monitor Manufacturer: Thermo

Model No.: SOLA II

Date of Latest CMS Certification or Audit: 12/17/2019 (Cylinder Gas Audit)

Process Unit(s) Description: Main Flare

Total source operating time in reporting period ¹: 4416 hours

| Emission data summary ¹ | | CMS performance summary ¹ | |
|---|--------------------|---|--------------------|
| 1. Duration of excess emissions in the reporting period due to: | | 1. CMS downtime in the reporting period due to: | |
| f. Startup/shutdown | 0 | a. Monitor equipment malfunctions | 0 |
| g. Control equipment problems | 0 | b. Non-Monitor equipment malfunctions | 0 |
| h. Process problems | 0 | c. Quality assurance calibration | 0 |
| i. Other known causes | 0 | d. Other known causes | 0 |
| j. Unknown causes | 0 | e. Unknown causes | 0 |
| 2. Total duration of excess emissions | 0 | 2. Total CMS Downtime | 0 |
| 3. Total duration of excess emissions x (100) / [Total source operating time] | 0.0 % ² | 3. [Total CMS Downtime] x (100) / [Total source operating time] | 0.0 % ² |

¹ For opacity, record all times in minutes. For gases, record all times in hours.

² For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report described in 40 CFR 60.7(c) shall be submitted. **See Attachment 3 for excess emissions information.**

Note: On a separate page, describe any changes since last quarter in CMS, process or controls. **No changes to the CMS, process, or controls have occurred since last reporting period.**

EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE SUMMARY REPORT

Pollutant (Circle One): SO₂ NO_x TRS **H₂S** CO Opacity

Reporting period dates: From July 1, 2019 to December 31, 2019

Company: Monroe Energy, LLC

Emission Limitation: 162 ppm H₂S (3 hour Average)

Address: 4101 Post Rd, Trainer PA 19061

Monitor Manufacturer: Applied Automation

Model No.: AV4070

Date of Latest CMS Certification or Audit: 12/4/2019 (Cylinder Gas Audit)

Process Unit(s) Description: North Side Fuel Gas System

Total source operating time in reporting period ¹: 4416 hours

| Emission data summary ¹ | | CMS performance summary ¹ | |
|---|---------------------|---|---------------------|
| 1. Duration of excess emissions in the reporting period due to: | | 1. CMS downtime in the reporting period due to: | |
| f. Startup/shutdown | 0 | a. Monitor equipment malfunctions | 0 |
| g. Control equipment problems | 0 | b. Non-Monitor equipment malfunctions | 0 |
| h. Process problems | 2 | c. Quality assurance calibration | 5 |
| i. Other known causes | 0 | d. Other known causes | 28 |
| j. Unknown causes | 0 | e. Unknown causes | 1 |
| 2. Total duration of excess emissions | 2 | 2. Total CMS Downtime | 34 |
| 3. Total duration of excess emissions x (100) / [Total source operating time] | 0.05 % ² | 3. [Total CMS Downtime] x (100) / [Total source operating time] | 0.77 % ² |

¹ For opacity, record all times in minutes. For gases, record all times in hours.

² For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report described in 40 CFR 60.7(c) shall be submitted.

Note: On a separate page, describe any changes since last quarter in CMS, process or controls. **No changes to the CMS, process, or controls have occurred since last reporting period.**

EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE SUMMARY REPORT

Pollutant (Circle One): SO₂ NO_x TRS H₂S CO Opacity

Reporting period dates: From July 1, 2019 to December 31, 2019

Company: Monroe Energy, LLC

Emission Limitation: 162 ppm H₂S (3 hour Average)

Address: 4101 Post Rd, Trainer PA 19061

Monitor Manufacturer: Applied Automation

Model No.: AV4071

Date of Latest CMS Certification or Audit: 12/5/2019 (Cylinder Gas Audit)

Process Unit(s) Description: South Side Fuel Gas System

Total source operating time in reporting period ¹: 4416 hours

| Emission data summary ¹ | | CMS performance summary ¹ | |
|---|---------------------|---|---------------------|
| 1. Duration of excess emissions in the reporting period due to: | | 1. CMS downtime in the reporting period due to: | |
| k. Startup/shutdown | 0 | a. Monitor equipment malfunctions | 0 |
| l. Control equipment problems | 0 | b. Non-Monitor equipment malfunctions | 0 |
| m. Process problems | 0 | c. Quality assurance calibration | 3 |
| n. Other known causes | 0 | d. Other known causes | 9 |
| o. Unknown causes | 0 | e. Unknown causes | 0 |
| 2. Total duration of excess emissions | 0 | 2. Total CMS Downtime | 12 |
| 3. Total duration of excess emissions x (100) / [Total source operating time] | 0.00 % ² | 3. [Total CMS Downtime] x (100) / [Total source operating time] | 0.27 % ² |

¹ For opacity, record all times in minutes. For gases, record all times in hours.

² For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report described in 40 CFR 60.7(c) shall be submitted.

Note: On a separate page, describe any changes since last quarter in CMS, process or controls. **No changes to the CMS, process, or controls have occurred since last reporting period.**

EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE SUMMARY REPORT

Pollutant (Circle One): SO₂ NO_x TRS H₂S CO Opacity

Reporting period dates: From July 1, 2019 to December 31, 2019

Company: Monroe Energy, LLC

Emission Limitation: 162 ppm (3 hour average)

Address: 4101 Post Rd, Trainer PA 19061

Monitor Manufacturer: ABB

Model No.: PGC5000

Date of Latest CMS Certification or Audit: 12/13/2019 (Cylinder Gas Audit)

Process Unit(s) Description: Main Flare

Total source operating time in reporting period ¹: 4416 hours

| Emission data summary ¹ | | CMS performance summary ¹ | |
|---|----------------------------|---|----------------------------|
| 1. Duration of excess emissions in the reporting period due to: | | 1. CMS downtime in the reporting period due to: | |
| k. Startup/shutdown | <u>0</u> | a. Monitor equipment malfunctions | <u>0</u> |
| l. Control equipment problems | <u>0</u> | b. Non-Monitor equipment malfunctions | <u>0</u> |
| m. Process problems | <u>0</u> | c. Quality assurance calibration | <u>7</u> |
| n. Other known causes | <u>0</u> | d. Other known causes | <u>0</u> |
| o. Unknown causes | <u>0</u> | e. Unknown causes | <u>7</u> |
| 2. Total duration of excess emissions | <u>0</u> | 2. Total CMS Downtime | <u>14</u> |
| 3. Total duration of excess emissions x (100) / [Total source operating time] | <u>0.00</u> % ² | 3. [Total CMS Downtime] x (100) / [Total source operating time] | <u>0.32</u> % ² |

¹ For opacity, record all times in minutes. For gases, record all times in hours.

² For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report described in 40 CFR 60.7(c) shall be submitted. **See Appendix B for excess emissions information.**

Note: On a separate page, describe any changes since last quarter in CMS, process or controls. **No changes to the CMS, process, or controls have occurred since last reporting period.**

Attachment 4: Excess Emissions and Emission Limit Exceedances

If any deviations occur from standards that use CEMS for compliance, refer to Attachment 7 to view detailed CEMS downtime information.

Source:

FCCU

Standard:

500 PPM CO 1-Hr Average Limit

There were no deviations from this standard during the reporting period.

Source:

FCCU

Standard:

L:G Ratio ≥ 0.08 (Per November, 2005) – Demonstrates Compliance for PM and Opacity Standards

There were no deviations from this standard during the reporting period.

Source:

FCCU

Standard:

50 ppm SO₂ (7-day rolling average); 25 ppm SO₂ (365-day rolling average)

There were no deviations from this standard during the reporting period.

Source:

SRU

Standard:

250 PPM SO₂ 12-Hr Rolling Average Limit

There were no deviations from this standard during the reporting period.

Source:

Main Flare

Standard:

162 ppm H₂S 3-Hr Rolling Average Limit

There were no deviations from this standard during the reporting period.

Source:
Standard:

Fuel Gas H₂S
162 ppm H₂S 3-Hr Rolling Average Limit

| Start | Duration | Caused by SSM event? | Nature and Cause of Event? | Corrective Action Taken? |
|--------------------|----------|----------------------|---|---|
| 12/2/2019 17:00 | 2 hours | No | Freezing conditions caused the south side fuel gas line to back into the FCC Dry Gas line. This event overwhelmed the FCC Absorber and caused an increase of H ₂ S in the Northside Fuel Gas Line. | Propane was reduced to the south side fuel gas, which allowed the temperature at the south side fuel gas line to increase. Normal conditions were then resumed. |

Attachment 5: CEMS Certification/Audit Details

Linearity Test

Plant: MONROE ENERGY, LLC.

Report Period: 07/01/2019 00:00 Through 12/31/2019 23:59

Source: SRUSTACK

Parameter: SO2

System ID:

Component ID:

Span Value: 500.000

Span Scale Code: H

Test End Date/Time: 09/16/19 08:26

Test Number: XML (17-Q3-2019-1) / EDR (1)

Reason for Test: Periodic Quality Assurance

Test Result: **Pass**

Abbreviated?: No

| Injection Time | Reference Value | Measured Value | Difference | % of Reference |
|----------------|-----------------|----------------|------------|----------------|
|----------------|-----------------|----------------|------------|----------------|

Mid-Level

| | | | | |
|----------------|---------|---------|--------|-----|
| 09/16/19 07:44 | 268.200 | 270.100 | -1.900 | 0.7 |
| 09/16/19 08:04 | 268.200 | 270.200 | -2.000 | 0.7 |
| 09/16/19 08:23 | 268.200 | 270.300 | -2.100 | 0.8 |

Reference Mean: 268.200
Measured Mean: 270.200
Level Error: 0.7
APS Indicator: False
Gas Type Code: BALN,SO2
Vendor Identifier:
Cylinder #: ALM017428
Cylinder Exp. Date: 02/13/2027

| Injection Time | Reference Value | Measured Value | Difference | % of Reference |
|----------------|-----------------|----------------|------------|----------------|
|----------------|-----------------|----------------|------------|----------------|

High-Level

| | | | | |
|----------------|---------|---------|--------|-----|
| 09/16/19 07:48 | 450.700 | 456.500 | -5.800 | 1.3 |
| 09/16/19 08:07 | 450.700 | 452.300 | -1.600 | 0.4 |
| 09/16/19 08:26 | 450.700 | 448.900 | 1.800 | 0.4 |

Reference Mean: 450.700
Measured Mean: 452.567
Level Error: 0.4
APS Indicator: False
Gas Type Code: BALN,SO2
Vendor Identifier:
Cylinder #: CC107667
Cylinder Exp. Date: 05/30/2025

| Injection Time | Reference Value | Measured Value | Difference | % of Reference |
|----------------|-----------------|----------------|------------|----------------|
|----------------|-----------------|----------------|------------|----------------|

Low-Level

| | | | | |
|----------------|-------|-------|--------|--|
| 09/16/19 07:38 | 0.000 | 0.500 | -0.500 | |
| 09/16/19 07:59 | 0.000 | 0.500 | -0.500 | |
| 09/16/19 08:18 | 0.000 | 0.400 | -0.400 | |

Reference Mean: 0.000
Measured Mean: 0.467
Level Error:
APS Indicator: False
Gas Type Code:
Vendor Identifier:
Cylinder #:
Cylinder Exp. Date:

Linearity Test

Plant: MONROE ENERGY, LLC.
Report Period: 07/01/2019 00:00 Through 12/31/2019 23:59

Source: SRUSTACK
Parameter: O2
System ID:
Component ID:
Span Value: 25.000
Span Scale Code: H

Test End Date/Time: 09/16/19 09:29
Test Number: XML (18-Q3-2019-1) / EDR (1)
Reason for Test: Periodic Quality Assurance
Test Result: **Pass**
Abbreviated?: No

| Injection Time | Reference Value | Measured Value | Difference | % of Reference |
|------------------|-----------------|----------------|------------|----------------|
| Low-Level | | | | |
| 09/16/19 08:53 | 0.000 | 0.000 | 0.000 | |
| 09/16/19 09:06 | 0.000 | 0.000 | 0.000 | |
| 09/16/19 09:20 | 0.000 | 0.000 | 0.000 | |

Reference Mean: 0.000
Measured Mean: 0.000
Level Error:
APS Indicator: False
Gas Type Code:
Vendor Identifier:
Cylinder #:
Cylinder Exp. Date:

| Injection Time | Reference Value | Measured Value | Difference | % of Reference |
|------------------|-----------------|----------------|------------|----------------|
| Mid-Level | | | | |
| 09/16/19 08:57 | 13.100 | 13.100 | 0.000 | 0.0 |
| 09/16/19 09:11 | 13.100 | 13.100 | 0.000 | 0.0 |
| 09/16/19 09:24 | 13.100 | 13.100 | 0.000 | 0.0 |

Reference Mean: 13.100
Measured Mean: 13.100
Level Error: 0.0
APS Indicator: False
Gas Type Code: BALN,O2
Vendor Identifier: A12011
Cylinder #: ALM062568
Cylinder Exp. Date: 01/02/2021

| Injection Time | Reference Value | Measured Value | Difference | % of Reference |
|-------------------|-----------------|----------------|------------|----------------|
| High-Level | | | | |
| 09/16/19 09:01 | 22.100 | 22.100 | 0.000 | 0.0 |
| 09/16/19 09:15 | 22.100 | 22.200 | -0.100 | 0.5 |
| 09/16/19 09:29 | 22.100 | 22.200 | -0.100 | 0.5 |

Reference Mean: 22.100
Measured Mean: 22.167
Level Error: 0.3
APS Indicator: False
Gas Type Code:
Vendor Identifier:
Cylinder #: CC481978
Cylinder Exp. Date: 10/10/2026

Linearity Test

Plant: MONROE ENERGY, LLC.
Report Period: 07/01/2019 00:00 Through 12/31/2019 23:59

Source: SRUSTACK
Parameter: SO2
System ID:
Component ID:
Span Value: 500.000
Span Scale Code: H

Test End Date/Time: 11/06/19 10:30
Test Number: XML (17-Q4-2019-1) / EDR (1)
Reason for Test: Periodic Quality Assurance
Test Result: **Pass**
Abbreviated?: No

| Injection Time | Reference Value | Measured Value | Difference | % of Reference |
|------------------|-----------------|----------------|------------|----------------|
| Mid-Level | | | | |
| 11/06/19 09:39 | 268.200 | 268.300 | -0.100 | 0.0 |
| 11/06/19 10:05 | 268.200 | 268.300 | -0.100 | 0.0 |
| 11/06/19 10:26 | 268.200 | 269.100 | -0.900 | 0.3 |

Reference Mean: 268.200
Measured Mean: 268.567
Level Error: 0.1
APS Indicator: False
Gas Type Code: BALN,SO2
Vendor Identifier:
Cylinder #: CC67490
Cylinder Exp. Date: 02/13/2027

| Injection Time | Reference Value | Measured Value | Difference | % of Reference |
|-------------------|-----------------|----------------|------------|----------------|
| High-Level | | | | |
| 11/06/19 09:45 | 450.700 | 452.000 | -1.300 | 0.3 |
| 11/06/19 10:10 | 450.700 | 455.800 | -5.100 | 1.1 |
| 11/06/19 10:30 | 450.700 | 454.900 | -4.200 | 0.9 |

Reference Mean: 450.700
Measured Mean: 454.233
Level Error: 0.8
APS Indicator: False
Gas Type Code: BALN,SO2
Vendor Identifier:
Cylinder #: CC107667
Cylinder Exp. Date: 05/30/2025

| Injection Time | Reference Value | Measured Value | Difference | % of Reference |
|------------------|-----------------|----------------|------------|----------------|
| Low-Level | | | | |
| 11/06/19 09:30 | 0.000 | 0.000 | 0.000 | |
| 11/06/19 10:00 | 0.000 | 0.700 | -0.700 | |
| 11/06/19 10:22 | 0.000 | 1.100 | -1.100 | |

Reference Mean: 0.000
Measured Mean: 0.600
Level Error:
APS Indicator: False
Gas Type Code:
Vendor Identifier:
Cylinder #:
Cylinder Exp. Date:

Linearity Test

Plant: MONROE ENERGY, LLC.

Report Period: 07/01/2019 00:00 Through 12/31/2019 23:59

Source: SRUSTACK

Parameter: O2

System ID:

Component ID:

Span Value: 25.000

Span Scale Code: H

Test End Date/Time: 11/06/19 11:25

Test Number: XML (18-Q4-2019-1) / EDR (1)

Reason for Test: Periodic Quality Assurance

Test Result: **Pass**

Abbreviated?: No

| Injection Time | Reference Value | Measured Value | Difference | % of Reference |
|------------------|-----------------|----------------|------------|----------------|
| Low-Level | | | | |
| 11/06/19 10:46 | 0.000 | 0.000 | 0.000 | |
| 11/06/19 11:01 | 0.000 | 0.000 | 0.000 | |
| 11/06/19 11:15 | 0.000 | 0.000 | 0.000 | |

Reference Mean: 0.000
Measured Mean: 0.000
Level Error:
APS Indicator: False
Gas Type Code:
Vendor Identifier:
Cylinder #:
Cylinder Exp. Date:

| Injection Time | Reference Value | Measured Value | Difference | % of Reference |
|------------------|-----------------|----------------|------------|----------------|
| Mid-Level | | | | |
| 11/06/19 10:53 | 13.100 | 13.100 | 0.000 | 0.0 |
| 11/06/19 11:05 | 13.100 | 13.100 | 0.000 | 0.0 |
| 11/06/19 11:20 | 13.100 | 13.100 | 0.000 | 0.0 |

Reference Mean: 13.100
Measured Mean: 13.100
Level Error: 0.0
APS Indicator: False
Gas Type Code: BALN,O2
Vendor Identifier: A12011
Cylinder #: ALM062568
Cylinder Exp. Date: 01/02/2021

| Injection Time | Reference Value | Measured Value | Difference | % of Reference |
|-------------------|-----------------|----------------|------------|----------------|
| High-Level | | | | |
| 11/06/19 10:57 | 22.100 | 21.300 | 0.800 | 3.6 |
| 11/06/19 11:10 | 22.100 | 21.300 | 0.800 | 3.6 |
| 11/06/19 11:25 | 22.100 | 21.200 | 0.900 | 4.1 |

Reference Mean: 22.100
Measured Mean: 21.267
Level Error: 3.8
APS Indicator: False
Gas Type Code:
Vendor Identifier:
Cylinder #: CC481978
Cylinder Exp. Date: 10/10/2026

Cylinder Gas Audit

Plant: MONROE ENERGY, LLC.

Report Period: 07/01/2019 00:00 Through 12/31/2019 23:59

Source: S_H2S

Parameter: S_H2S

Instrument Span: 300.000

Test Date/Time: 09/12/19 10:26

Test Result: **Pass**

Aborted?: No

| Time | CEMS Value | Audit Value | Difference | % of Audit Value |
|------------------|------------|-------------|------------|------------------|
| Mid-Level | | | | |
| 09/12/19 09:27 | 152.300 | 152.300 | 0.000 | 0.0 |
| 09/12/19 09:50 | 155.900 | 152.300 | 3.600 | 2.4 |
| 09/12/19 10:09 | 155.100 | 152.300 | 2.800 | 1.8 |

CEMS Mean (Cm): 154.433
 Audit Mean (Ca): 152.300
 Accuracy (A) in %: 1.4
 Mean Difference: 2.1
 APS Indicator: 0
 Cylinder #: CC429252
 Cylinder Exp. Date: 01/10/2020

| Time | CEMS Value | Audit Value | Difference | % of Audit Value |
|-------------------|------------|-------------|------------|------------------|
| High-Level | | | | |
| 09/12/19 09:40 | 259.400 | 261.900 | -2.500 | -1.0 |
| 09/12/19 10:05 | 258.000 | 261.900 | -3.900 | -1.5 |
| 09/12/19 10:26 | 259.000 | 261.900 | -2.900 | -1.1 |

CEMS Mean (Cm): 258.800
 Audit Mean (Ca): 261.900
 Accuracy (A) in %: -1.2
 Mean Difference: -3.1
 APS Indicator: 0
 Cylinder #: CC505170
 Cylinder Exp. Date: 02/18/2022

| Time | CEMS Value | Audit Value | Difference | % of Audit Value |
|------------------|------------|-------------|------------|------------------|
| Low-Level | | | | |
| 09/12/19 09:35 | 0.000 | 0.000 | 0.000 | #Error |
| 09/12/19 09:57 | 0.000 | 0.000 | 0.000 | #Error |
| 09/12/19 10:18 | 0.000 | 0.000 | 0.000 | #Error |

CEMS Mean (Cm): 0.000
 Audit Mean (Ca): 0.000
 Accuracy (A) in %: #Error
 Mean Difference: 0.0
 APS Indicator: 0
 Cylinder #:
 Cylinder Exp. Date:

Cylinder Gas Audit

Plant: MONROE ENERGY, LLC.

Report Period: 07/01/2019 00:00 Through 12/31/2019 23:59

Source: S_H2S
Parameter: S_H2S
Instrument Span: 300.000

Test Date/Time: 12/05/19 10:02

Test Result: **Pass**

Aborted?: No

| Time | CEMS Value | Audit Value | Difference | % of Audit Value |
|------------------|------------|-------------|------------|------------------|
| Mid-Level | | | | |
| 12/05/19 09:06 | 150.200 | 152.300 | -2.100 | -1.4 |
| 12/05/19 09:31 | 149.700 | 152.300 | -2.600 | -1.7 |
| 12/05/19 09:53 | 151.400 | 152.300 | -0.900 | -0.6 |

CEMS Mean (Cm): 150.433
Audit Mean (Ca): 152.300
Accuracy (A) in %: -1.2
Mean Difference: -1.9
APS Indicator: 0
Cylinder #: CC429252
Cylinder Exp. Date: 01/10/2020

| Time | CEMS Value | Audit Value | Difference | % of Audit Value |
|-------------------|------------|-------------|------------|------------------|
| High-Level | | | | |
| 12/05/19 09:02 | 262.600 | 261.900 | 0.700 | 0.3 |
| 12/05/19 09:27 | 263.100 | 261.900 | 1.200 | 0.5 |
| 12/05/19 09:47 | 260.900 | 261.900 | -1.000 | -0.4 |

CEMS Mean (Cm): 262.200
Audit Mean (Ca): 261.900
Accuracy (A) in %: 0.1
Mean Difference: 0.3
APS Indicator: 0
Cylinder #: CC505170
Cylinder Exp. Date: 02/18/2022

| Time | CEMS Value | Audit Value | Difference | % of Audit Value |
|------------------|------------|-------------|------------|------------------|
| Low-Level | | | | |
| 12/05/19 09:18 | 0.000 | 0.000 | 0.000 | #Error |
| 12/05/19 09:41 | 0.000 | 0.000 | 0.000 | #Error |
| 12/05/19 10:02 | 0.000 | 0.000 | 0.000 | #Error |

CEMS Mean (Cm): 0.000
Audit Mean (Ca): 0.000
Accuracy (A) in %: #Error
Mean Difference: 0.0
APS Indicator: 0
Cylinder #:
Cylinder Exp. Date:

Cylinder Gas Audit

Plant: MONROE ENERGY, LLC.

Report Period: 07/01/2019 00:00 Through 12/31/2019 23:59

Source: N_H2S

Parameter: N_H2S

Instrument Span: 300.000

Test Date/Time: 09/10/19 10:32

Test Result: **Pass**

Aborted?: No

| Time | CEMS Value | Audit Value | Difference | % of Audit Value |
|-------------------|------------|-------------|------------|------------------|
| High-Level | | | | |
| 09/10/19 09:40 | 262.200 | 261.500 | 0.700 | 0.3 |
| 09/10/19 10:00 | 264.400 | 261.500 | 2.900 | 1.1 |
| 09/10/19 10:22 | 264.500 | 261.500 | 3.000 | 1.1 |

CEMS Mean (Cm): 263.700
 Audit Mean (Ca): 261.500
 Accuracy (A) in %: 0.8
 Mean Difference: 2.2
 APS Indicator: 0
 Cylinder #: CC466840
 Cylinder Exp. Date: 07/09/2021

| Time | CEMS Value | Audit Value | Difference | % of Audit Value |
|------------------|------------|-------------|------------|------------------|
| Mid-Level | | | | |
| 09/10/19 09:36 | 150.700 | 151.100 | -0.400 | -0.3 |
| 09/10/19 09:54 | 152.700 | 151.100 | 1.600 | 1.1 |
| 09/10/19 10:15 | 150.100 | 151.100 | -1.000 | -0.7 |

CEMS Mean (Cm): 151.167
 Audit Mean (Ca): 151.100
 Accuracy (A) in %: 0.0
 Mean Difference: 0.1
 APS Indicator: 0
 Cylinder #: CC277507
 Cylinder Exp. Date: 05/22/2021

| Time | CEMS Value | Audit Value | Difference | % of Audit Value |
|------------------|------------|-------------|------------|------------------|
| Low-Level | | | | |
| 09/10/19 09:48 | 0.000 | 0.000 | 0.000 | #Error |
| 09/10/19 10:05 | 0.000 | 0.000 | 0.000 | #Error |
| 09/10/19 10:32 | 0.000 | 0.000 | 0.000 | #Error |

CEMS Mean (Cm): 0.000
 Audit Mean (Ca): 0.000
 Accuracy (A) in %: #Error
 Mean Difference: 0.0
 APS Indicator: 0
 Cylinder #:
 Cylinder Exp. Date:

Cylinder Gas Audit

Plant: MONROE ENERGY, LLC.

Report Period: 07/01/2019 00:00 Through 12/31/2019 23:59

Source: N_H2S
Parameter: N_H2S
Instrument Span: 300.000

Test Date/Time: 12/04/19 10:15

Test Result: **Pass**

Aborted?: No

| Time | CEMS Value | Audit Value | Difference | % of Audit Value |
|------------------|------------|-------------|------------|------------------|
| Mid-Level | | | | |
| 12/04/19 09:23 | 151.400 | 151.100 | 0.300 | 0.2 |
| 12/04/19 09:48 | 151.000 | 151.100 | -0.100 | -0.1 |
| 12/04/19 10:09 | 149.800 | 151.100 | -1.300 | -0.9 |

CEMS Mean (Cm): 150.733
Audit Mean (Ca): 151.100
Accuracy (A) in %: -0.2
Mean Difference: -0.4
APS Indicator: 0
Cylinder #: CC277507
Cylinder Exp. Date: 05/22/2021

| Time | CEMS Value | Audit Value | Difference | % of Audit Value |
|-------------------|------------|-------------|------------|------------------|
| High-Level | | | | |
| 12/04/19 09:29 | 260.900 | 259.600 | 1.300 | 0.5 |
| 12/04/19 09:52 | 262.400 | 259.600 | 2.800 | 1.1 |
| 12/04/19 10:15 | 263.900 | 259.600 | 4.300 | 1.7 |

CEMS Mean (Cm): 262.400
Audit Mean (Ca): 259.600
Accuracy (A) in %: 1.1
Mean Difference: 2.8
APS Indicator: 0
Cylinder #: ALM053208
Cylinder Exp. Date: 05/13/2022

| Time | CEMS Value | Audit Value | Difference | % of Audit Value |
|------------------|------------|-------------|------------|------------------|
| Low-Level | | | | |
| 12/04/19 09:12 | 0.000 | 0.000 | 0.000 | #Error |
| 12/04/19 09:41 | 0.000 | 0.000 | 0.000 | #Error |
| 12/04/19 10:04 | 0.000 | 0.000 | 0.000 | #Error |

CEMS Mean (Cm): 0.000
Audit Mean (Ca): 0.000
Accuracy (A) in %: #Error
Mean Difference: 0.0
APS Indicator: 0
Cylinder #:
Cylinder Exp. Date:

Cylinder Gas Audit

Plant: MONROE ENERGY, LLC.

Report Period: 07/01/2019 00:00 Through 12/31/2019 23:59

Source: M_FLARE

Parameter: H2S

Instrument Span: 300.000

Test Date/Time: 09/19/19 11:17

Test Result: **Pass**

Aborted?: No

| Time | CEMS Value | Audit Value | Difference | % of Audit Value |
|------------------|------------|-------------|------------|------------------|
| Mid-Level | | | | |
| 09/19/19 09:30 | 146.100 | 151.400 | -5.300 | -3.5 |
| 09/19/19 10:15 | 153.300 | 151.400 | 1.900 | 1.3 |
| 09/19/19 11:05 | 147.200 | 151.400 | -4.200 | -2.8 |

CEMS Mean (Cm): 148.867
 Audit Mean (Ca): 151.400
 Accuracy (A) in %: -1.7
 Mean Difference: -2.5
 APS Indicator: 0
 Cylinder #: ALM017637
 Cylinder Exp. Date: 02/28/2020

| Time | CEMS Value | Audit Value | Difference | % of Audit Value |
|-------------------|------------|-------------|------------|------------------|
| High-Level | | | | |
| 09/19/19 09:42 | 260.700 | 259.000 | 1.700 | 0.7 |
| 09/19/19 10:27 | 271.200 | 259.000 | 12.200 | 4.7 |
| 09/19/19 11:17 | 264.500 | 259.000 | 5.500 | 2.1 |

CEMS Mean (Cm): 265.467
 Audit Mean (Ca): 259.000
 Accuracy (A) in %: 2.5
 Mean Difference: 6.5
 APS Indicator: 0
 Cylinder #: ALM056017
 Cylinder Exp. Date: 05/13/2022

| Time | CEMS Value | Audit Value | Difference | % of Audit Value |
|------------------|------------|-------------|------------|------------------|
| Low-Level | | | | |
| 09/19/19 09:18 | 0.900 | 0.000 | 0.900 | #Error |
| 09/19/19 10:03 | 1.600 | 0.000 | 1.600 | #Error |
| 09/19/19 10:53 | 1.400 | 0.000 | 1.400 | #Error |

CEMS Mean (Cm): 1.300
 Audit Mean (Ca): 0.000
 Accuracy (A) in %: #Error
 Mean Difference: 1.3
 APS Indicator: 0
 Cylinder #:
 Cylinder Exp. Date:

Cylinder Gas Audit

Plant: MONROE ENERGY, LLC.

Report Period: 07/01/2019 00:00 Through 12/31/2019 23:59

Source: M_FLARE
Parameter: SOLA_TRS
Instrument Span: 5000.000

Test Date/Time: 09/20/19 09:40

Test Result: **Pass**

Aborted?: No

| Time | CEMS Value | Audit Value | Difference | % of Audit Value |
|------------------|------------|-------------|------------|------------------|
| Low-Level | | | | |
| 09/20/19 07:43 | 74.000 | 73.900 | 0.100 | 0.1 |
| 09/20/19 08:28 | 76.600 | 73.900 | 2.700 | 3.7 |
| 09/20/19 09:16 | 79.800 | 73.900 | 5.900 | 8.0 |

CEMS Mean (Cm): 76.800
Audit Mean (Ca): 73.900
Accuracy (A) in %: 3.9
Mean Difference: 2.9
APS Indicator: 0
Cylinder #: ALM017637
Cylinder Exp. Date: 02/28/2020

| Time | CEMS Value | Audit Value | Difference | % of Audit Value |
|------------------|------------|-------------|------------|------------------|
| Mid-Level | | | | |
| 09/20/19 07:55 | 150.500 | 151.400 | -0.900 | -0.6 |
| 09/20/19 08:40 | 151.400 | 151.400 | 0.000 | 0.0 |
| 09/20/19 09:28 | 152.700 | 151.400 | 1.300 | 0.9 |

CEMS Mean (Cm): 151.533
Audit Mean (Ca): 151.400
Accuracy (A) in %: 0.1
Mean Difference: 0.1
APS Indicator: 0
Cylinder #: SG9145498
Cylinder Exp. Date: 01/30/2022

| Time | CEMS Value | Audit Value | Difference | % of Audit Value |
|-------------------|------------|-------------|------------|------------------|
| High-Level | | | | |
| 09/20/19 08:07 | 2,440.600 | 2,399.000 | 41.600 | 1.7 |
| 09/20/19 08:52 | 2,440.700 | 2,399.000 | 41.700 | 1.7 |
| 09/20/19 09:40 | 2,443.400 | 2,399.000 | 44.400 | 1.9 |

CEMS Mean (Cm): 2441.567
Audit Mean (Ca): 2399.000
Accuracy (A) in %: 1.8
Mean Difference: 42.6
APS Indicator: 0
Cylinder #: SG9145498
Cylinder Exp. Date: 01/30/2022

Cylinder Gas Audit

Plant: MONROE ENERGY, LLC.

Report Period: 07/01/2019 00:00 Through 12/31/2019 23:59

Source: M_FLARE

Parameter: H2S

Instrument Span: 300.000

Test Date/Time: 12/13/19 10:14

Test Result: **Pass**

Aborted?: No

| Time | CEMS Value | Audit Value | Difference | % of Audit Value |
|-------------------|------------|-------------|------------|------------------|
| High-Level | | | | |
| 12/13/19 08:45 | 266.500 | 261.200 | 5.300 | 2.0 |
| 12/13/19 09:30 | 261.100 | 261.200 | -0.100 | 0.0 |
| 12/13/19 10:14 | 258.100 | 261.200 | -3.100 | -1.2 |

CEMS Mean (Cm): 261.900

Audit Mean (Ca): 261.200

Accuracy (A) in %: 0.3

Mean Difference: 0.7

APS Indicator: 0

Cylinder #: CC209525

Cylinder Exp. Date: 12/18/2021

| Time | CEMS Value | Audit Value | Difference | % of Audit Value |
|------------------|------------|-------------|------------|------------------|
| Mid-Level | | | | |
| 12/13/19 08:33 | 155.500 | 150.900 | 4.600 | 3.0 |
| 12/13/19 09:18 | 151.600 | 150.900 | 0.700 | 0.5 |
| 12/13/19 10:02 | 148.200 | 150.900 | -2.700 | -1.8 |

CEMS Mean (Cm): 151.767

Audit Mean (Ca): 150.900

Accuracy (A) in %: 0.6

Mean Difference: 0.9

APS Indicator: 0

Cylinder #: CC318435

Cylinder Exp. Date: 07/08/2022

| Time | CEMS Value | Audit Value | Difference | % of Audit Value |
|------------------|------------|-------------|------------|------------------|
| Low-Level | | | | |
| 12/13/19 08:22 | 0.000 | 0.000 | 0.000 | #Error |
| 12/13/19 09:06 | 1.500 | 0.000 | 1.500 | #Error |
| 12/13/19 09:50 | 1.700 | 0.000 | 1.700 | #Error |

CEMS Mean (Cm): 1.067

Audit Mean (Ca): 0.000

Accuracy (A) in %: #Error

Mean Difference: 1.1

APS Indicator: 0

Cylinder #:

Cylinder Exp. Date:

Cylinder Gas Audit

Plant: MONROE ENERGY, LLC.

Report Period: 07/01/2019 00:00 Through 12/31/2019 23:59

Source: M_FLARE
Parameter: SOLA_TRS
Instrument Span: 5000.000

Test Date/Time: 12/17/19 12:50

Test Result: **Pass**

Aborted?: No

| Time | CEMS Value | Audit Value | Difference | % of Audit Value |
|------------------|------------|-------------|------------|------------------|
| Low-Level | | | | |
| 12/17/19 10:53 | 68.200 | 73.900 | -5.700 | -7.7 |
| 12/17/19 11:41 | 70.700 | 73.900 | -3.200 | -4.3 |
| 12/17/19 12:26 | 71.200 | 73.900 | -2.700 | -3.7 |

CEMS Mean (Cm): 70.033
Audit Mean (Ca): 73.900
Accuracy (A) in %: -5.2
Mean Difference: -3.9
APS Indicator: 0
Cylinder #:
Cylinder Exp. Date:

| Time | CEMS Value | Audit Value | Difference | % of Audit Value |
|------------------|------------|-------------|------------|------------------|
| Mid-Level | | | | |
| 12/17/19 11:05 | 153.600 | 150.900 | 2.700 | 1.8 |
| 12/17/19 11:53 | 152.200 | 150.900 | 1.300 | 0.9 |
| 12/17/19 12:38 | 155.100 | 150.900 | 4.200 | 2.8 |

CEMS Mean (Cm): 153.633
Audit Mean (Ca): 150.900
Accuracy (A) in %: 1.8
Mean Difference: 2.7
APS Indicator: 0
Cylinder #: CC318435
Cylinder Exp. Date: 07/08/2022

| Time | CEMS Value | Audit Value | Difference | % of Audit Value |
|-------------------|------------|-------------|------------|------------------|
| High-Level | | | | |
| 12/17/19 11:17 | 2,453.700 | 2,399.000 | 54.700 | 2.3 |
| 12/17/19 12:05 | 2,454.200 | 2,399.000 | 55.200 | 2.3 |
| 12/17/19 12:50 | 2,453.400 | 2,399.000 | 54.400 | 2.3 |

CEMS Mean (Cm): 2453.767
Audit Mean (Ca): 2399.000
Accuracy (A) in %: 2.3
Mean Difference: 54.8
APS Indicator: 0
Cylinder #: SG9145498
Cylinder Exp. Date: 01/30/2022

Linearity Test

Plant: MONROE ENERGY, LLC.

Report Period: 07/01/2019 00:00 Through 12/31/2019 23:59

Source: FCCSTACK
Parameter: CO
System ID:
Component ID:
Span Value: 1,000.000
Span Scale Code: H

Test End Date/Time: 09/18/19 08:20
Test Number: XML (33-Q3-2019-1) / EDR (1)
Reason for Test: Periodic Quality Assurance
Test Result: **Pass**
Abbreviated?: No

| Injection Time | Reference Value | Measured Value | Difference | % of Reference |
|------------------|-----------------|----------------|------------|----------------|
| Mid-Level | | | | |
| 09/18/19 07:50 | 518.800 | 529.700 | -10.900 | 2.1 |
| 09/18/19 08:03 | 518.800 | 522.400 | -3.600 | 0.7 |
| 09/18/19 08:16 | 518.800 | 520.800 | -2.000 | 0.4 |

Reference Mean: 518.800
Measured Mean: 524.300
Level Error: 1.1
APS Indicator: False
Gas Type Code: BALN,CO
Vendor Identifier:
Cylinder #: cc160178
Cylinder Exp. Date: 01/31/2025

| Injection Time | Reference Value | Measured Value | Difference | % of Reference |
|-------------------|-----------------|----------------|------------|----------------|
| High-Level | | | | |
| 09/18/19 07:54 | 913.200 | 915.800 | -2.600 | 0.3 |
| 09/18/19 08:07 | 913.200 | 911.600 | 1.600 | 0.2 |
| 09/18/19 08:20 | 913.200 | 909.300 | 3.900 | 0.4 |

Reference Mean: 913.200
Measured Mean: 912.233
Level Error: 0.1
APS Indicator: False
Gas Type Code: BALN,CO
Vendor Identifier:
Cylinder #: CC159495
Cylinder Exp. Date: 02/20/2026

| Injection Time | Reference Value | Measured Value | Difference | % of Reference |
|------------------|-----------------|----------------|------------|----------------|
| Low-Level | | | | |
| 09/18/19 07:46 | 0.000 | 0.300 | -0.300 | |
| 09/18/19 07:59 | 0.000 | 2.200 | -2.200 | |
| 09/18/19 08:12 | 0.000 | 2.800 | -2.800 | |

Reference Mean: 0.000
Measured Mean: 1.767
Level Error:
APS Indicator: False
Gas Type Code:
Vendor Identifier:
Cylinder #:
Cylinder Exp. Date:

Linearity Test

Plant: MONROE ENERGY, LLC.

Report Period: 07/01/2019 00:00 Through 12/31/2019 23:59

Source: FCCSTACK
Parameter: O2
System ID:
Component ID:
Span Value: 25.000
Span Scale Code: H

Test End Date/Time: 09/18/19 08:47
Test Number: XML (27-Q3-2019-1) / EDR (1)
Reason for Test: Periodic Quality Assurance
Test Result: **Pass**
Abbreviated?: No

| Injection Time | Reference Value | Measured Value | Difference | % of Reference |
|------------------|-----------------|----------------|------------|----------------|
| Low-Level | | | | |
| 09/18/19 08:23 | 0.000 | 0.100 | -0.100 | |
| 09/18/19 08:32 | 0.000 | 0.200 | -0.200 | |
| 09/18/19 08:41 | 0.000 | 0.200 | -0.200 | |

Reference Mean: 0.000
Measured Mean: 0.167
Level Error:
APS Indicator: False
Gas Type Code:
Vendor Identifier:
Cylinder #:
Cylinder Exp. Date:

| Injection Time | Reference Value | Measured Value | Difference | % of Reference |
|------------------|-----------------|----------------|------------|----------------|
| Mid-Level | | | | |
| 09/18/19 08:26 | 13.100 | 13.100 | 0.000 | 0.0 |
| 09/18/19 08:35 | 13.100 | 13.100 | 0.000 | 0.0 |
| 09/18/19 08:44 | 13.100 | 13.100 | 0.000 | 0.0 |

Reference Mean: 13.100
Measured Mean: 13.100
Level Error: 0.0
APS Indicator: False
Gas Type Code: O2
Vendor Identifier:
Cylinder #: ALM051526
Cylinder Exp. Date: 01/02/2021

| Injection Time | Reference Value | Measured Value | Difference | % of Reference |
|-------------------|-----------------|----------------|------------|----------------|
| High-Level | | | | |
| 09/18/19 08:29 | 22.100 | 22.100 | 0.000 | 0.0 |
| 09/18/19 08:38 | 22.100 | 22.100 | 0.000 | 0.0 |
| 09/18/19 08:47 | 22.100 | 22.200 | -0.100 | 0.5 |

Reference Mean: 22.100
Measured Mean: 22.133
Level Error: 0.1
APS Indicator: False
Gas Type Code: BALN,O2
Vendor Identifier:
Cylinder #: ALM049834
Cylinder Exp. Date: 02/11/2027

Linearity Test

Plant: MONROE ENERGY, LLC.

Report Period: 07/01/2019 00:00 Through 12/31/2019 23:59

Source: FCCSTACK

Parameter: SO2

System ID:

Component ID:

Span Value: 100.000

Span Scale Code: H

Test End Date/Time: 09/18/19 09:57

Test Number: XML (29-Q3-2019-1) / EDR (1)

Reason for Test: Periodic Quality Assurance

Test Result: **Pass**

Abbreviated?: No

| Injection Time | Reference Value | Measured Value | Difference | % of Reference |
|----------------|-----------------|----------------|------------|----------------|
|----------------|-----------------|----------------|------------|----------------|

Mid-Level

| | | | | |
|----------------|--------|--------|-------|-----|
| 09/18/19 09:31 | 50.400 | 50.000 | 0.400 | 0.8 |
| 09/18/19 09:43 | 50.400 | 48.300 | 2.100 | 4.2 |
| 09/18/19 09:55 | 50.400 | 48.600 | 1.800 | 3.6 |

Reference Mean: 50.400
Measured Mean: 48.967
Level Error: 2.8
APS Indicator: False
Gas Type Code: SO2
Vendor Identifier:
Cylinder #: alm022262
Cylinder Exp. Date: 08/10/2021

| Injection Time | Reference Value | Measured Value | Difference | % of Reference |
|----------------|-----------------|----------------|------------|----------------|
|----------------|-----------------|----------------|------------|----------------|

High-Level

| | | | | |
|----------------|--------|--------|--------|-----|
| 09/18/19 09:35 | 87.900 | 89.100 | -1.200 | 1.4 |
| 09/18/19 09:47 | 87.900 | 87.200 | 0.700 | 0.8 |
| 09/18/19 09:57 | 87.900 | 85.600 | 2.300 | 2.6 |

Reference Mean: 87.900
Measured Mean: 87.300
Level Error: 0.7
APS Indicator: False
Gas Type Code: BALN,SO2
Vendor Identifier:
Cylinder #: CC245093
Cylinder Exp. Date: 01/23/2027

| Injection Time | Reference Value | Measured Value | Difference | % of Reference |
|----------------|-----------------|----------------|------------|----------------|
|----------------|-----------------|----------------|------------|----------------|

Low-Level

| | | | | |
|----------------|-------|-------|--------|--|
| 09/18/19 09:27 | 0.000 | 0.700 | -0.700 | |
| 09/18/19 09:39 | 0.000 | 0.500 | -0.500 | |
| 09/18/19 09:51 | 0.000 | 0.000 | 0.000 | |

Reference Mean: 0.000
Measured Mean: 0.400
Level Error:
APS Indicator: False
Gas Type Code:
Vendor Identifier:
Cylinder #:
Cylinder Exp. Date:

Linearity Test

Plant: MONROE ENERGY, LLC.

Report Period: 07/01/2019 00:00 Through 12/31/2019 23:59

Source: FCCSTACK
Parameter: CO
System ID:
Component ID:
Span Value: 1,000.000
Span Scale Code: H

Test End Date/Time: 12/17/19 09:31
Test Number: XML (33-Q4-2019-1) / EDR (1)
Reason for Test: Periodic Quality Assurance
Test Result: **Pass**
Abbreviated?: No

| Injection Time | Reference Value | Measured Value | Difference | % of Reference |
|----------------|-----------------|----------------|------------|----------------|
|----------------|-----------------|----------------|------------|----------------|

Low-Level

| | | | | |
|----------------|-------|-------|--------|--|
| 12/17/19 08:58 | 0.000 | 0.100 | -0.100 | |
| 12/17/19 09:12 | 0.000 | 2.300 | -2.300 | |
| 12/17/19 09:24 | 0.000 | 2.400 | -2.400 | |

Reference Mean: 0.000
Measured Mean: 1.600
Level Error:
APS Indicator: False
Gas Type Code:
Vendor Identifier:
Cylinder #:
Cylinder Exp. Date:

| Injection Time | Reference Value | Measured Value | Difference | % of Reference |
|----------------|-----------------|----------------|------------|----------------|
|----------------|-----------------|----------------|------------|----------------|

Mid-Level

| | | | | |
|----------------|---------|---------|--------|-----|
| 12/17/19 09:02 | 518.800 | 517.800 | 1.000 | 0.2 |
| 12/17/19 09:14 | 518.800 | 525.000 | -6.200 | 1.2 |
| 12/17/19 09:26 | 518.800 | 518.600 | 0.200 | 0.0 |

Reference Mean: 518.800
Measured Mean: 520.467
Level Error: 0.3
APS Indicator: False
Gas Type Code: BALN,CO
Vendor Identifier:
Cylinder #: cc160178
Cylinder Exp. Date: 01/31/2025

| Injection Time | Reference Value | Measured Value | Difference | % of Reference |
|----------------|-----------------|----------------|------------|----------------|
|----------------|-----------------|----------------|------------|----------------|

High-Level

| | | | | |
|----------------|---------|---------|--------|-----|
| 12/17/19 09:07 | 901.700 | 903.200 | -1.500 | 0.2 |
| 12/17/19 09:19 | 901.700 | 902.700 | -1.000 | 0.1 |
| 12/17/19 09:31 | 901.700 | 896.400 | 5.300 | 0.6 |

Reference Mean: 901.700
Measured Mean: 900.767
Level Error: 0.1
APS Indicator: False
Gas Type Code: BALN,CO
Vendor Identifier:
Cylinder #: CC41237
Cylinder Exp. Date: 08/05/2027

Linearity Test

Plant: MONROE ENERGY, LLC.

Report Period: 07/01/2019 00:00 Through 12/31/2019 23:59

Source: FCCSTACK

Parameter: O2

System ID:

Component ID:

Span Value: 25.000

Span Scale Code: H

Test End Date/Time: 12/17/19 10:07

Test Number: XML (27-Q4-2019-1) / EDR (1)

Reason for Test: Periodic Quality Assurance

Test Result: **Pass**

Abbreviated?: No

| Injection Time | Reference Value | Measured Value | Difference | % of Reference |
|------------------|-----------------|----------------|------------|----------------|
| Mid-Level | | | | |
| 12/17/19 09:38 | 13.100 | 12.900 | 0.200 | 1.5 |
| 12/17/19 09:51 | 13.100 | 13.000 | 0.100 | 0.8 |
| 12/17/19 10:03 | 13.100 | 13.000 | 0.100 | 0.8 |

Reference Mean: 13.100
 Measured Mean: 12.967
 Level Error: 1.0
 APS Indicator: False
 Gas Type Code: O2
 Vendor Identifier:
 Cylinder #: ALM051526
 Cylinder Exp. Date: 01/02/2021

| Injection Time | Reference Value | Measured Value | Difference | % of Reference |
|-------------------|-----------------|----------------|------------|----------------|
| High-Level | | | | |
| 12/17/19 09:43 | 22.100 | 22.000 | 0.100 | 0.5 |
| 12/17/19 09:55 | 22.100 | 22.100 | 0.000 | 0.0 |
| 12/17/19 10:07 | 22.100 | 22.100 | 0.000 | 0.0 |

Reference Mean: 22.100
 Measured Mean: 22.067
 Level Error: 0.1
 APS Indicator: False
 Gas Type Code: BALN,O2
 Vendor Identifier:
 Cylinder #: CC492730
 Cylinder Exp. Date: 01/13/2027

| Injection Time | Reference Value | Measured Value | Difference | % of Reference |
|------------------|-----------------|----------------|------------|----------------|
| Low-Level | | | | |
| 12/17/19 09:34 | 0.000 | 0.000 | 0.000 | |
| 12/17/19 09:47 | 0.000 | 0.100 | -0.100 | |
| 12/17/19 09:59 | 0.000 | 0.100 | -0.100 | |

Reference Mean: 0.000
 Measured Mean: 0.067
 Level Error:
 APS Indicator: False
 Gas Type Code:
 Vendor Identifier:
 Cylinder #:
 Cylinder Exp. Date:

Linearity Test

Plant: MONROE ENERGY, LLC.

Report Period: 07/01/2019 00:00 Through 12/31/2019 23:59

Source: FCCSTACK
Parameter: SO2
System ID:
Component ID:
Span Value: 100.000
Span Scale Code: H

Test End Date/Time: 12/17/19 11:25
Test Number: XML (29-Q4-2019-1) / EDR (1)
Reason for Test: Periodic Quality Assurance
Test Result: **Pass**
Abbreviated?: No

| Injection Time | Reference Value | Measured Value | Difference | % of Reference |
|----------------|-----------------|----------------|------------|----------------|
|----------------|-----------------|----------------|------------|----------------|

Low-Level

| | | | | |
|----------------|-------|-------|--------|--|
| 12/17/19 10:48 | 0.000 | 0.000 | 0.000 | |
| 12/17/19 11:03 | 0.000 | 0.900 | -0.900 | |
| 12/17/19 11:16 | 0.000 | 1.400 | -1.400 | |

Reference Mean: 0.000
Measured Mean: 0.767
Level Error:
APS Indicator: False
Gas Type Code:
Vendor Identifier:
Cylinder #:
Cylinder Exp. Date:

| Injection Time | Reference Value | Measured Value | Difference | % of Reference |
|----------------|-----------------|----------------|------------|----------------|
|----------------|-----------------|----------------|------------|----------------|

Mid-Level

| | | | | |
|----------------|--------|--------|-------|-----|
| 12/17/19 10:53 | 50.400 | 48.100 | 2.300 | 4.6 |
| 12/17/19 11:08 | 50.400 | 49.800 | 0.600 | 1.2 |
| 12/17/19 11:21 | 50.400 | 50.000 | 0.400 | 0.8 |

Reference Mean: 50.400
Measured Mean: 49.300
Level Error: 2.2
APS Indicator: False
Gas Type Code: SO2
Vendor Identifier:
Cylinder #: alm022262
Cylinder Exp. Date: 08/10/2021

| Injection Time | Reference Value | Measured Value | Difference | % of Reference |
|----------------|-----------------|----------------|------------|----------------|
|----------------|-----------------|----------------|------------|----------------|

High-Level

| | | | | |
|----------------|--------|--------|--------|-----|
| 12/17/19 10:58 | 87.600 | 87.700 | -0.100 | 0.1 |
| 12/17/19 11:12 | 87.600 | 88.000 | -0.400 | 0.5 |
| 12/17/19 11:25 | 87.600 | 87.200 | 0.400 | 0.5 |

Reference Mean: 87.600
Measured Mean: 87.633
Level Error: 0.0
APS Indicator: False
Gas Type Code: BALN,SO2
Vendor Identifier:
Cylinder #: CC414231
Cylinder Exp. Date: 05/28/2027

Attachment 6: Reportable Discharges per 60.108a(c)(6)

There was one reportable discharge during the reporting period.

| Discharge 1-Main Flare | | |
|--|--|-----------------|
| Date and Time Discharge first Identified | | 11/1/2019 14:00 |
| Source | Main Flare (Source ID 103) | |
| Description of the Discharge: | Loss of electricity caused an unplanned shut down of several process units which resulted in exceeding the flow rate of 500 mscf for both 11/1/2019 & 11/2/2019 for the flare system. The hourly data is provided below. | |
| Duration of the Discharge | 24 hours | |
| Quantity of Gas Discharged from the flare (Totals - MSCF) | Date | 24-Hour Sum |
| | 11/1/2019 14:00 | 507,917.10 |
| | 11/1/2019 15:00 | 656,081.22 |
| | 11/1/2019 16:00 | 674,558.21 |
| | 11/1/2019 17:00 | 681,988.99 |
| | 11/1/2019 18:00 | 688,767.52 |
| | 11/1/2019 19:00 | 691,037.54 |
| | 11/1/2019 20:00 | 691,428.17 |
| | 11/1/2019 21:00 | 691,544.60 |
| | 11/1/2019 22:00 | 691,544.60 |
| | 11/1/2019 23:00 | 691,772.46 |
| | 11/2/2019 0:00 | 692,457.57 |
| | 11/2/2019 1:00 | 692,457.57 |
| | 11/2/2019 2:00 | 692,457.57 |
| | 11/2/2019 3:00 | 692,457.57 |
| | 11/2/2019 4:00 | 692,457.57 |
| | 11/2/2019 5:00 | 692,457.57 |
| | 11/2/2019 6:00 | 692,457.57 |
| | 11/2/2019 7:00 | 688,426.76 |
| | 11/2/2019 8:00 | 688,341.63 |
| | 11/2/2019 9:00 | 684,080.84 |
| | 11/2/2019 10:00 | 682,282.17 |
| | 11/2/2019 11:00 | 679,352.48 |
| | 11/2/2019 12:00 | 676,422.80 |
| | 11/2/2019 13:00 | 673,493.11 |
| Was discharge greater than 500 lbs SO ₂ /24 hours? | | No |
| Steps taken to limit the emissions during the discharge? | Flare minimization procedures were used during the unplanned shutdown and start-up of the units. | |
| Root causes | 1. An electrical breaker that powered pumps on the south side of the refinery tripped offline resulting in a shutdown of several process units. | |
| Corrective Actions | 1. The contactor was isolated from the main bus and the main central control center breaker was able to be re-energized. This allowed the power to be restored. (Completed 11/1/2019) 2. Develop and implement a visual and mechanical checkout procedure for all removable medium voltage air magnetic motor starters. Checkout procedure is recommended to be done in parallel with preventive maintenance of driven equipment. (7/31/2020) | |
| Did discharge result from same root cause as previous discharge? | | No |

Attachment 7: Daily Drift Test Results for the FCCU SO₂ Analyzer

Calibration Detail

Plant: MONROE ENERGY, LLC.

Report Period: 07/01/2019 00:00 Through 12/31/2019 23:59

Source: FCCSTACK

| | Zero Level | | | Span Level | | | Results | | | |
|------------------|-----------------|-----------------|-----------|-----------------|-----------------|-----------|-----------|--------------|-------------|---------|
| End Date / Time | Reference Value | Actual Response | Cal Error | Reference Value | Actual Response | Cal Error | Cal Limit | Error Method | Pass/Fail | On-Line |
| SO2 | | | | | | | | | | |
| 07/01/2019 05:01 | 0.0 | -1.1 | 1.1 | 87.9 | 85.7 | 2.2 | 5.0 | DIFF | Passed | Yes |
| 07/02/2019 05:01 | 0.0 | -1.7 | 1.7 | 87.9 | 85.7 | 2.2 | 5.0 | DIFF | Passed | Yes |
| 07/03/2019 05:01 | 0.0 | -0.5 | 0.5 | 87.9 | 87.3 | 0.6 | 5.0 | DIFF | Passed | Yes |
| 07/04/2019 05:01 | 0.0 | 0.8 | 0.8 | 87.9 | 88.0 | 0.1 | 5.0 | DIFF | Passed | Yes |
| 07/05/2019 05:01 | 0.0 | 1.2 | 1.2 | 87.9 | 88.8 | 0.9 | 5.0 | DIFF | Passed | Yes |
| 07/06/2019 05:01 | 0.0 | 1.6 | 1.6 | 87.9 | 90.1 | 2.2 | 5.0 | DIFF | Passed | Yes |
| 07/07/2019 05:01 | 0.0 | 2.3 | 2.3 | 87.9 | 88.5 | 0.6 | 5.0 | DIFF | Passed | Yes |
| 07/08/2019 05:01 | 0.0 | 1.7 | 1.7 | 87.9 | 89.1 | 1.2 | 5.0 | DIFF | Passed | Yes |
| 07/09/2019 05:01 | 0.0 | 1.8 | 1.8 | 87.9 | 89.4 | 1.5 | 5.0 | DIFF | Passed | Yes |
| 07/10/2019 05:01 | 0.0 | 1.2 | 1.2 | 87.9 | 89.5 | 1.6 | 5.0 | DIFF | Passed | Yes |
| 07/11/2019 05:01 | 0.0 | 1.1 | 1.1 | 87.9 | 88.0 | 0.1 | 5.0 | DIFF | Passed | Yes |
| 07/12/2019 05:01 | 0.0 | 2.3 | 2.3 | 87.9 | 88.0 | 0.1 | 5.0 | DIFF | Passed | Yes |
| 07/13/2019 05:01 | 0.0 | 1.2 | 1.2 | 87.9 | 89.2 | 1.3 | 5.0 | DIFF | Passed | Yes |
| 07/14/2019 05:01 | 0.0 | 1.3 | 1.3 | 87.9 | 88.1 | 0.2 | 5.0 | DIFF | Passed | Yes |
| 07/15/2019 05:01 | 0.0 | 0.4 | 0.4 | 87.9 | 87.9 | 0.0 | 5.0 | DIFF | Passed | Yes |
| 07/16/2019 05:01 | 0.0 | -0.2 | 0.2 | 87.9 | 87.8 | 0.1 | 5.0 | DIFF | Passed | Yes |
| 07/16/2019 08:30 | 0.0 | 0.9 | 0.9 | 87.9 | 89.2 | 1.3 | 5.0 | DIFF | Passed | Yes |
| 07/17/2019 05:01 | 0.0 | 0.9 | 0.9 | 87.9 | 89.2 | 1.3 | 5.0 | DIFF | Passed | Yes |
| 07/18/2019 05:01 | 0.0 | 1.9 | 1.9 | 87.9 | 88.2 | 0.3 | 5.0 | DIFF | Passed | Yes |
| 07/19/2019 05:00 | 0.0 | 2.9 | 2.9 | 87.9 | 89.9 | 2.0 | 5.0 | DIFF | Passed | Yes |
| 07/19/2019 12:29 | 0.0 | 1.2 | 1.2 | 87.9 | 87.3 | 0.6 | 5.0 | DIFF | Maint Limit | Yes |
| 07/20/2019 05:00 | 0.0 | -0.5 | 0.5 | 87.9 | 86.2 | 1.7 | 5.0 | DIFF | Passed | Yes |
| 07/20/2019 11:37 | 0.0 | 1.1 | 1.1 | 87.9 | 87.4 | 0.5 | 5.0 | DIFF | Passed | Yes |
| 07/20/2019 12:04 | 0.0 | 1.4 | 1.4 | 87.9 | 87.5 | 0.4 | 5.0 | DIFF | Passed | Yes |
| 07/21/2019 05:00 | 0.0 | -0.9 | 0.9 | 87.9 | 86.3 | 1.6 | 5.0 | DIFF | Passed | Yes |
| 07/22/2019 05:00 | 0.0 | -1.0 | 1.0 | 87.9 | 84.3 | 3.6 | 5.0 | DIFF | Maint Limit | Yes |
| 07/23/2019 05:00 | 0.0 | 0.0 | 0.0 | 87.9 | 86.7 | 1.2 | 5.0 | DIFF | Passed | Yes |
| 07/24/2019 05:01 | 0.0 | -0.3 | 0.3 | 87.9 | 86.1 | 1.8 | 5.0 | DIFF | Passed | Yes |
| 07/25/2019 05:01 | 0.0 | -1.8 | 1.8 | 87.9 | 86.7 | 1.2 | 5.0 | DIFF | Passed | Yes |
| 07/26/2019 05:01 | 0.0 | -2.1 | 2.1 | 87.9 | 85.8 | 2.1 | 5.0 | DIFF | Passed | Yes |
| 07/27/2019 05:01 | 0.0 | -2.5 | 2.5 | 87.9 | 85.7 | 2.2 | 5.0 | DIFF | Passed | Yes |
| 07/28/2019 05:01 | 0.0 | -1.8 | 1.8 | 87.9 | 86.4 | 1.5 | 5.0 | DIFF | Passed | Yes |
| 07/29/2019 05:01 | 0.0 | -1.4 | 1.4 | 87.9 | 87.3 | 0.6 | 5.0 | DIFF | Passed | Yes |
| 07/30/2019 05:01 | 0.0 | -0.7 | 0.7 | 87.9 | 86.4 | 1.5 | 5.0 | DIFF | Passed | Yes |
| 07/31/2019 05:01 | 0.0 | -0.8 | 0.8 | 87.9 | 86.6 | 1.3 | 5.0 | DIFF | Passed | Yes |
| 08/01/2019 05:01 | 0.0 | -0.3 | 0.3 | 87.9 | 87.9 | 0.0 | 5.0 | DIFF | Passed | Yes |
| 08/02/2019 05:01 | 0.0 | 0.2 | 0.2 | 87.9 | 86.9 | 1.0 | 5.0 | DIFF | Passed | Yes |
| 08/03/2019 05:01 | 0.0 | 0.7 | 0.7 | 87.9 | 88.3 | 0.4 | 5.0 | DIFF | Passed | Yes |
| 08/04/2019 05:01 | 0.0 | 0.5 | 0.5 | 87.9 | 86.3 | 1.6 | 5.0 | DIFF | Passed | Yes |
| 08/05/2019 05:00 | 0.0 | -0.5 | 0.5 | 87.9 | 87.4 | 0.5 | 5.0 | DIFF | Passed | Yes |
| 08/06/2019 05:00 | 0.0 | -0.3 | 0.3 | 87.9 | 86.1 | 1.8 | 5.0 | DIFF | Passed | Yes |
| 08/07/2019 05:00 | 0.0 | 0.5 | 0.5 | 87.9 | 87.3 | 0.6 | 5.0 | DIFF | Passed | Yes |
| 08/08/2019 05:00 | 0.0 | 1.1 | 1.1 | 87.9 | 87.4 | 0.5 | 5.0 | DIFF | Passed | Yes |

Calibration Error: Failed Test Failed Level Maintenance Limit

Report Generated: 01/22/20 15:22

Report Version 4.0

MONROE\srvt_TRN-Stackvision

1 of 5

Calibration Detail

Plant: MONROE ENERGY, LLC.

Report Period: 07/01/2019 00:00 Through 12/31/2019 23:59

Source: FCCSTACK

| | Zero Level | | | Span Level | | | Results | | | |
|------------------|-----------------|-----------------|-----------|-----------------|-----------------|-----------|-----------|--------------|-------------|---------|
| End Date / Time | Reference Value | Actual Response | Cal Error | Reference Value | Actual Response | Cal Error | Cal Limit | Error Method | Pass/Fail | On-Line |
| SO2 | | | | | | | | | | |
| 08/09/2019 05:00 | 0.0 | 0.4 | 0.4 | 87.9 | 87.8 | 0.1 | 5.0 | DIFF | Passed | Yes |
| 08/10/2019 05:01 | 0.0 | -0.6 | 0.6 | 87.9 | 85.9 | 2.0 | 5.0 | DIFF | Passed | Yes |
| 08/11/2019 05:00 | 0.0 | -1.9 | 1.9 | 87.9 | 85.1 | 2.8 | 5.0 | DIFF | Maint Limit | Yes |
| 08/12/2019 05:00 | 0.0 | -2.5 | 2.5 | 87.9 | 85.6 | 2.3 | 5.0 | DIFF | Passed | Yes |
| 08/13/2019 05:00 | 0.0 | -1.7 | 1.7 | 87.9 | 84.6 | 3.3 | 5.0 | DIFF | Maint Limit | Yes |
| 08/14/2019 05:00 | 0.0 | 0.6 | 0.6 | 87.9 | 85.9 | 2.0 | 5.0 | DIFF | Passed | Yes |
| 08/15/2019 05:00 | 0.0 | 1.6 | 1.6 | 87.9 | 87.4 | 0.5 | 5.0 | DIFF | Passed | Yes |
| 08/16/2019 05:00 | 0.0 | 1.3 | 1.3 | 87.9 | 88.9 | 1.0 | 5.0 | DIFF | Passed | Yes |
| 08/17/2019 05:00 | 0.0 | 1.9 | 1.9 | 87.9 | 88.8 | 0.9 | 5.0 | DIFF | Passed | Yes |
| 08/18/2019 05:00 | 0.0 | 1.6 | 1.6 | 87.9 | 87.7 | 0.2 | 5.0 | DIFF | Passed | Yes |
| 08/19/2019 05:00 | 0.0 | 2.4 | 2.4 | 87.9 | 88.0 | 0.1 | 5.0 | DIFF | Passed | Yes |
| 08/20/2019 05:00 | 0.0 | 1.8 | 1.8 | 87.9 | 90.0 | 2.1 | 5.0 | DIFF | Passed | Yes |
| 08/21/2019 05:00 | 0.0 | 2.3 | 2.3 | 87.9 | 87.8 | 0.1 | 5.0 | DIFF | Passed | Yes |
| 08/22/2019 05:00 | 0.0 | 2.2 | 2.2 | 87.9 | 88.5 | 0.6 | 5.0 | DIFF | Passed | Yes |
| 08/23/2019 05:00 | 0.0 | 1.9 | 1.9 | 87.9 | 87.6 | 0.3 | 5.0 | DIFF | Passed | Yes |
| 08/24/2019 05:00 | 0.0 | 0.9 | 0.9 | 87.9 | 88.5 | 0.6 | 5.0 | DIFF | Passed | Yes |
| 08/25/2019 05:00 | 0.0 | 0.0 | 0.0 | 87.9 | 86.7 | 1.2 | 5.0 | DIFF | Passed | Yes |
| 08/26/2019 05:00 | 0.0 | -0.8 | 0.8 | 87.9 | 86.5 | 1.4 | 5.0 | DIFF | Passed | Yes |
| 08/27/2019 05:00 | 0.0 | -1.4 | 1.4 | 87.9 | 85.3 | 2.6 | 5.0 | DIFF | Maint Limit | Yes |
| 08/28/2019 05:00 | 0.0 | -0.2 | 0.2 | 87.9 | 86.8 | 1.1 | 5.0 | DIFF | Passed | Yes |
| 08/29/2019 05:00 | 0.0 | 1.7 | 1.7 | 87.9 | 86.6 | 1.3 | 5.0 | DIFF | Passed | Yes |
| 08/30/2019 05:00 | 0.0 | 0.2 | 0.2 | 87.9 | 86.3 | 1.6 | 5.0 | DIFF | Passed | Yes |
| 08/31/2019 05:00 | 0.0 | -0.3 | 0.3 | 87.9 | 86.6 | 1.3 | 5.0 | DIFF | Passed | Yes |
| 09/01/2019 05:00 | 0.0 | -1.1 | 1.1 | 87.9 | 87.4 | 0.5 | 5.0 | DIFF | Passed | Yes |
| 09/02/2019 05:00 | 0.0 | -0.8 | 0.8 | 87.9 | 87.2 | 0.7 | 5.0 | DIFF | Passed | Yes |
| 09/03/2019 05:00 | 0.0 | 2.2 | 2.2 | 87.9 | 88.5 | 0.6 | 5.0 | DIFF | Passed | Yes |
| 09/04/2019 05:00 | 0.0 | 1.2 | 1.2 | 87.9 | 88.2 | 0.3 | 5.0 | DIFF | Passed | Yes |
| 09/05/2019 05:00 | 0.0 | 2.0 | 2.0 | 87.9 | 89.0 | 1.1 | 5.0 | DIFF | Passed | Yes |
| 09/06/2019 05:00 | 0.0 | 1.0 | 1.0 | 87.9 | 87.1 | 0.8 | 5.0 | DIFF | Passed | Yes |
| 09/07/2019 05:00 | 0.0 | 0.5 | 0.5 | 87.9 | 87.0 | 0.9 | 5.0 | DIFF | Passed | Yes |
| 09/08/2019 05:00 | 0.0 | -0.2 | 0.2 | 87.9 | 86.8 | 1.1 | 5.0 | DIFF | Passed | Yes |
| 09/09/2019 05:00 | 0.0 | -0.4 | 0.4 | 87.9 | 85.9 | 2.0 | 5.0 | DIFF | Passed | Yes |
| 09/10/2019 05:00 | 0.0 | 0.7 | 0.7 | 87.9 | 88.4 | 0.5 | 5.0 | DIFF | Passed | Yes |
| 09/11/2019 05:00 | 0.0 | 2.5 | 2.5 | 87.9 | 89.6 | 1.7 | 5.0 | DIFF | Passed | Yes |
| 09/12/2019 05:00 | 0.0 | 3.7 | 3.7 | 87.9 | 88.2 | 0.3 | 5.0 | DIFF | Maint Limit | Yes |
| 09/13/2019 05:00 | 0.0 | 3.7 | 3.7 | 87.9 | 91.1 | 3.2 | 5.0 | DIFF | Maint Limit | Yes |
| 09/14/2019 05:00 | 0.0 | 2.2 | 2.2 | 87.9 | 89.9 | 2.0 | 5.0 | DIFF | Passed | Yes |
| 09/15/2019 05:00 | 0.0 | 3.1 | 3.1 | 87.9 | 90.8 | 2.9 | 5.0 | DIFF | Maint Limit | Yes |
| 09/16/2019 05:00 | 0.0 | 2.6 | 2.6 | 87.9 | 89.3 | 1.4 | 5.0 | DIFF | Maint Limit | Yes |
| 09/17/2019 05:00 | 0.0 | 2.3 | 2.3 | 87.9 | 89.0 | 1.1 | 5.0 | DIFF | Passed | Yes |
| 09/18/2019 05:00 | 0.0 | 1.4 | 1.4 | 87.9 | 89.2 | 1.3 | 5.0 | DIFF | Passed | Yes |
| 09/19/2019 05:00 | 0.0 | -1.4 | 1.4 | 87.9 | 84.9 | 3.0 | 5.0 | DIFF | Maint Limit | Yes |
| 09/20/2019 05:00 | 0.0 | -1.6 | 1.6 | 87.9 | 84.7 | 3.2 | 5.0 | DIFF | Maint Limit | Yes |

Calibration Error: Failed Test Failed Level Maintenance Limit

Report Generated: 01/22/20 15:22

Report Version 4.0

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Calibration Detail

Plant: MONROE ENERGY, LLC.

Report Period: 07/01/2019 00:00 Through 12/31/2019 23:59

Source: FCCSTACK

| | Zero Level | | | Span Level | | | Results | | | |
|------------------|-----------------|-----------------|-----------|-----------------|-----------------|-----------|-----------|--------------|-------------|---------|
| End Date / Time | Reference Value | Actual Response | Cal Error | Reference Value | Actual Response | Cal Error | Cal Limit | Error Method | Pass/Fail | On-Line |
| SO2 | | | | | | | | | | |
| 09/21/2019 05:00 | 0.0 | -1.7 | 1.7 | 87.9 | 84.8 | 3.1 | 5.0 | DIFF | Maint Limit | Yes |
| 09/22/2019 05:00 | 0.0 | -1.2 | 1.2 | 87.9 | 84.8 | 3.1 | 5.0 | DIFF | Maint Limit | Yes |
| 09/23/2019 05:00 | 0.0 | 0.7 | 0.7 | 87.9 | 85.2 | 2.7 | 5.0 | DIFF | Maint Limit | Yes |
| 09/24/2019 05:00 | 0.0 | 1.4 | 1.4 | 87.9 | 86.6 | 1.3 | 5.0 | DIFF | Passed | Yes |
| 09/25/2019 05:00 | 0.0 | 0.2 | 0.2 | 87.9 | 85.3 | 2.6 | 5.0 | DIFF | Maint Limit | Yes |
| 09/26/2019 05:00 | 0.0 | -0.4 | 0.4 | 87.9 | 84.7 | 3.2 | 5.0 | DIFF | Maint Limit | Yes |
| 09/26/2019 13:16 | 0.0 | -0.4 | 0.4 | 87.9 | 86.5 | 1.4 | 5.0 | DIFF | Passed | Yes |
| 09/27/2019 05:00 | 0.0 | -1.3 | 1.3 | 87.9 | 85.1 | 2.8 | 5.0 | DIFF | Maint Limit | Yes |
| 09/28/2019 05:00 | 0.0 | -2.3 | 2.3 | 87.9 | -2.2 | 90.1 | 5.0 | DIFF | Failed | Yes |
| 09/29/2019 05:00 | 0.0 | 0.5 | 0.5 | 87.9 | 80.0 | 7.9 | 5.0 | DIFF | Failed | Yes |
| 09/30/2019 05:00 | 0.0 | 0.4 | 0.4 | 87.9 | 88.8 | 0.9 | 5.0 | DIFF | Passed | Yes |
| 10/22/2019 07:30 | 0.0 | 0.7 | 0.7 | 87.9 | 88.6 | 0.7 | 5.0 | DIFF | Passed | Yes |
| 10/23/2019 05:00 | 0.0 | 1.0 | 1.0 | 87.9 | 86.9 | 1.0 | 5.0 | DIFF | Passed | Yes |
| 10/24/2019 05:00 | 0.0 | 1.8 | 1.8 | 87.9 | 58.6 | 29.3 | 5.0 | DIFF | Failed | Yes |
| 10/24/2019 08:29 | 0.0 | 0.5 | 0.5 | 87.9 | 88.7 | 0.8 | 5.0 | DIFF | Passed | Yes |
| 10/25/2019 05:02 | 0.0 | -4.8 | 4.8 | 87.9 | 86.8 | 1.1 | 5.0 | DIFF | Maint Limit | Yes |
| 10/26/2019 05:02 | 0.0 | -4.9 | 4.9 | 87.9 | 88.7 | 0.8 | 5.0 | DIFF | Maint Limit | Yes |
| 10/27/2019 05:02 | 0.0 | -5.3 | 5.3 | 87.9 | 88.7 | 0.8 | 5.0 | DIFF | Failed | Yes |
| 10/27/2019 09:50 | 0.0 | 0.3 | 0.3 | 87.9 | 88.5 | 0.6 | 5.0 | DIFF | Passed | Yes |
| 10/28/2019 05:02 | 0.0 | 0.8 | 0.8 | 87.9 | 89.4 | 1.5 | 5.0 | DIFF | Passed | Yes |
| 10/29/2019 05:02 | 0.0 | 0.3 | 0.3 | 87.9 | 89.9 | 2.0 | 5.0 | DIFF | Passed | Yes |
| 10/30/2019 05:02 | 0.0 | 0.3 | 0.3 | 87.9 | 90.5 | 2.6 | 5.0 | DIFF | Maint Limit | Yes |
| 10/31/2019 05:02 | 0.0 | 1.3 | 1.3 | 87.9 | 90.0 | 2.1 | 5.0 | DIFF | Passed | Yes |
| 11/01/2019 05:02 | 0.0 | 5.2 | 5.2 | 87.9 | 94.6 | 6.7 | 5.0 | DIFF | Failed | Yes |
| 11/01/2019 07:23 | 0.0 | 0.9 | 0.9 | 87.9 | 88.1 | 0.2 | 5.0 | DIFF | Passed | Yes |
| 11/02/2019 05:02 | 0.0 | -0.7 | 0.7 | 87.9 | 87.2 | 0.7 | 5.0 | DIFF | Passed | Yes |
| 11/03/2019 05:02 | 0.0 | -1.1 | 1.1 | 87.9 | 85.9 | 2.0 | 5.0 | DIFF | Passed | Yes |
| 11/04/2019 05:02 | 0.0 | -1.2 | 1.2 | 87.9 | 86.2 | 1.7 | 5.0 | DIFF | Passed | Yes |
| 11/05/2019 05:02 | 0.0 | -1.2 | 1.2 | 87.9 | 86.8 | 1.1 | 5.0 | DIFF | Passed | Yes |
| 11/06/2019 05:02 | 0.0 | -1.5 | 1.5 | 87.9 | 86.6 | 1.3 | 5.0 | DIFF | Passed | Yes |
| 11/07/2019 05:02 | 0.0 | -1.7 | 1.7 | 87.9 | 85.9 | 2.0 | 5.0 | DIFF | Passed | Yes |
| 11/08/2019 05:02 | 0.0 | -1.8 | 1.8 | 87.9 | 86.2 | 1.7 | 5.0 | DIFF | Passed | Yes |
| 11/09/2019 05:02 | 0.0 | -2.5 | 2.5 | 87.9 | 85.8 | 2.1 | 5.0 | DIFF | Passed | Yes |
| 11/10/2019 05:02 | 0.0 | -2.5 | 2.5 | 87.9 | 84.9 | 3.0 | 5.0 | DIFF | Maint Limit | Yes |
| 11/11/2019 05:02 | 0.0 | -2.5 | 2.5 | 87.9 | 81.7 | 6.2 | 5.0 | DIFF | Failed | Yes |
| 11/11/2019 09:23 | 0.0 | 0.0 | 0.0 | 87.9 | 86.9 | 1.0 | 5.0 | DIFF | Passed | Yes |
| 11/12/2019 05:02 | 0.0 | -1.6 | 1.6 | 87.9 | 86.4 | 1.5 | 5.0 | DIFF | Passed | Yes |
| 11/13/2019 05:02 | 0.0 | -0.1 | 0.1 | 87.6 | 90.7 | 3.1 | 5.0 | DIFF | Maint Limit | Yes |
| 11/14/2019 05:02 | 0.0 | -0.6 | 0.6 | 87.6 | 90.7 | 3.1 | 5.0 | DIFF | Maint Limit | Yes |
| 11/14/2019 13:34 | 0.0 | 0.7 | 0.7 | 87.6 | 88.2 | 0.6 | 5.0 | DIFF | Passed | Yes |
| 11/15/2019 05:02 | 0.0 | -0.1 | 0.1 | 87.6 | 87.6 | 0.0 | 5.0 | DIFF | Passed | Yes |
| 11/16/2019 05:02 | 0.0 | 0.2 | 0.2 | 87.6 | 87.8 | 0.2 | 5.0 | DIFF | Passed | Yes |
| 11/17/2019 05:02 | 0.0 | -0.5 | 0.5 | 87.6 | 87.6 | 0.0 | 5.0 | DIFF | Passed | Yes |

Calibration Error: **Failed Test** **Failed Level** **Maintenance Limit**

Report Generated: 01/22/20 15:22

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Calibration Detail

Plant: MONROE ENERGY, LLC.

Report Period: 07/01/2019 00:00 Through 12/31/2019 23:59

Source: FCCSTACK

| | Zero Level | | | Span Level | | | Results | | | |
|------------------|-----------------|-----------------|-----------|-----------------|-----------------|-----------|-----------|--------------|-------------|---------|
| End Date / Time | Reference Value | Actual Response | Cal Error | Reference Value | Actual Response | Cal Error | Cal Limit | Error Method | Pass/Fail | On-Line |
| SO2 | | | | | | | | | | |
| 11/18/2019 05:02 | 0.0 | 0.0 | 0.0 | 87.6 | 86.4 | 1.2 | 5.0 | DIFF | Passed | Yes |
| 11/19/2019 05:02 | 0.0 | 0.4 | 0.4 | 87.6 | 86.0 | 1.6 | 5.0 | DIFF | Passed | Yes |
| 11/20/2019 05:02 | 0.0 | 0.1 | 0.1 | 87.6 | 87.0 | 0.6 | 5.0 | DIFF | Passed | Yes |
| 11/21/2019 05:02 | 0.0 | 0.1 | 0.1 | 87.6 | 87.9 | 0.3 | 5.0 | DIFF | Passed | Yes |
| 11/22/2019 05:02 | 0.0 | 0.1 | 0.1 | 87.6 | 86.4 | 1.2 | 5.0 | DIFF | Passed | Yes |
| 11/23/2019 05:02 | 0.0 | -0.5 | 0.5 | 87.6 | 86.6 | 1.0 | 5.0 | DIFF | Passed | Yes |
| 11/24/2019 05:02 | 0.0 | -0.6 | 0.6 | 87.6 | 84.4 | 3.2 | 5.0 | DIFF | Maint Limit | Yes |
| 11/25/2019 05:02 | 0.0 | -0.7 | 0.7 | 87.6 | 85.3 | 2.3 | 5.0 | DIFF | Passed | Yes |
| 11/26/2019 05:02 | 0.0 | -0.6 | 0.6 | 87.6 | 86.0 | 1.6 | 5.0 | DIFF | Passed | Yes |
| 11/27/2019 05:02 | 0.0 | -0.6 | 0.6 | 87.6 | 86.7 | 0.9 | 5.0 | DIFF | Passed | Yes |
| 11/28/2019 05:02 | 0.0 | -0.7 | 0.7 | 87.6 | 86.0 | 1.6 | 5.0 | DIFF | Passed | Yes |
| 11/29/2019 05:02 | 0.0 | -1.2 | 1.2 | 87.6 | 86.0 | 1.6 | 5.0 | DIFF | Passed | Yes |
| 11/30/2019 05:02 | 0.0 | -1.4 | 1.4 | 87.6 | 86.2 | 1.4 | 5.0 | DIFF | Passed | Yes |
| 12/01/2019 05:02 | 0.0 | -1.7 | 1.7 | 87.6 | 85.6 | 2.0 | 5.0 | DIFF | Passed | Yes |
| 12/02/2019 05:02 | 0.0 | -1.3 | 1.3 | 87.6 | 84.2 | 3.4 | 5.0 | DIFF | Maint Limit | Yes |
| 12/03/2019 05:02 | 0.0 | -2.0 | 2.0 | 87.6 | 84.4 | 3.2 | 5.0 | DIFF | Maint Limit | Yes |
| 12/03/2019 11:09 | 0.0 | 0.7 | 0.7 | 87.6 | 88.2 | 0.6 | 5.0 | DIFF | Passed | Yes |
| 12/04/2019 05:02 | 0.0 | -1.5 | 1.5 | 87.6 | 86.4 | 1.2 | 5.0 | DIFF | Passed | Yes |
| 12/05/2019 05:02 | 0.0 | -3.2 | 3.2 | 87.6 | 86.9 | 0.7 | 5.0 | DIFF | Maint Limit | Yes |
| 12/06/2019 05:02 | 0.0 | -5.0 | 5.0 | 87.6 | 85.0 | 2.6 | 5.0 | DIFF | Maint Limit | Yes |
| 12/06/2019 08:59 | 0.0 | 0.4 | 0.4 | 87.6 | 88.3 | 0.7 | 5.0 | DIFF | Passed | Yes |
| 12/07/2019 05:02 | 0.0 | 0.5 | 0.5 | 87.6 | 88.1 | 0.5 | 5.0 | DIFF | Passed | Yes |
| 12/08/2019 05:02 | 0.0 | 0.1 | 0.1 | 87.6 | 89.7 | 2.1 | 5.0 | DIFF | Passed | Yes |
| 12/09/2019 05:02 | 0.0 | 0.3 | 0.3 | 87.6 | 88.2 | 0.6 | 5.0 | DIFF | Passed | Yes |
| 12/10/2019 05:02 | 0.0 | 0.5 | 0.5 | 87.6 | 87.7 | 0.1 | 5.0 | DIFF | Passed | Yes |
| 12/11/2019 05:02 | 0.0 | -0.3 | 0.3 | 87.6 | 87.6 | 0.0 | 5.0 | DIFF | Passed | Yes |
| 12/12/2019 05:02 | 0.0 | -2.4 | 2.4 | 87.6 | 86.8 | 0.8 | 5.0 | DIFF | Passed | Yes |
| 12/13/2019 05:02 | 0.0 | -4.1 | 4.1 | 87.6 | 85.1 | 2.5 | 5.0 | DIFF | Maint Limit | Yes |
| 12/14/2019 05:02 | 0.0 | -4.5 | 4.5 | 87.6 | 81.3 | 6.3 | 5.0 | DIFF | Failed | Yes |
| 12/14/2019 08:25 | 0.0 | -0.4 | 0.4 | 87.6 | 89.0 | 1.4 | 5.0 | DIFF | Passed | Yes |
| 12/15/2019 05:02 | 0.0 | -2.8 | 2.8 | 87.6 | 87.7 | 0.1 | 5.0 | DIFF | Maint Limit | Yes |
| 12/16/2019 05:02 | 0.0 | -5.6 | 5.6 | 87.6 | 86.4 | 1.2 | 5.0 | DIFF | Failed | Yes |
| 12/16/2019 09:37 | 0.0 | -0.1 | 0.1 | 87.6 | 87.8 | 0.2 | 5.0 | DIFF | Passed | Yes |
| 12/17/2019 05:02 | 0.0 | -2.8 | 2.8 | 87.6 | 83.3 | 4.3 | 5.0 | DIFF | Maint Limit | Yes |
| 12/18/2019 05:02 | 0.0 | 0.1 | 0.1 | 87.6 | 87.6 | 0.0 | 5.0 | DIFF | Passed | Yes |
| 12/19/2019 05:02 | 0.0 | 0.6 | 0.6 | 86.9 | 89.6 | 2.7 | 5.0 | DIFF | Maint Limit | Yes |
| 12/20/2019 05:02 | 0.0 | 0.5 | 0.5 | 86.9 | 89.5 | 2.6 | 5.0 | DIFF | Maint Limit | Yes |
| 12/21/2019 05:02 | 0.0 | 0.4 | 0.4 | 86.9 | 89.2 | 2.3 | 5.0 | DIFF | Passed | Yes |
| 12/22/2019 05:02 | 0.0 | -1.2 | 1.2 | 86.9 | 85.9 | 1.0 | 5.0 | DIFF | Passed | Yes |
| 12/23/2019 05:02 | 0.0 | -1.9 | 1.9 | 86.9 | 84.0 | 2.9 | 5.0 | DIFF | Maint Limit | Yes |
| 12/23/2019 13:11 | 0.0 | 1.3 | 1.3 | 86.9 | 87.4 | 0.5 | 5.0 | DIFF | Passed | Yes |
| 12/24/2019 05:02 | 0.0 | -0.3 | 0.3 | 86.9 | 86.9 | 0.0 | 5.0 | DIFF | Passed | Yes |

Calibration Error: Failed Test Failed Level Maintenance Limit

Report Generated: 01/22/20 15:22

Report Version 4.0

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Calibration Detail

Plant: MONROE ENERGY, LLC.

Report Period: 07/01/2019 00:00 Through 12/31/2019 23:59

Source: FCCSTACK

| | Zero Level | | | Span Level | | | Results | | | |
|------------------|-----------------|-----------------|-----------|-----------------|-----------------|-----------|-----------|--------------|-----------|---------|
| End Date / Time | Reference Value | Actual Response | Cal Error | Reference Value | Actual Response | Cal Error | Cal Limit | Error Method | Pass/Fail | On-Line |
| S02 | | | | | | | | | | |
| 12/25/2019 05:02 | 0.0 | -0.5 | 0.5 | 86.9 | 86.6 | 0.3 | 5.0 | DIFF | Passed | Yes |
| 12/26/2019 05:02 | 0.0 | -0.6 | 0.6 | 86.9 | 87.0 | 0.1 | 5.0 | DIFF | Passed | Yes |
| 12/27/2019 05:02 | 0.0 | -0.5 | 0.5 | 86.9 | 87.1 | 0.2 | 5.0 | DIFF | Passed | Yes |
| 12/28/2019 05:02 | 0.0 | -0.4 | 0.4 | 86.9 | 87.6 | 0.7 | 5.0 | DIFF | Passed | Yes |
| 12/29/2019 05:02 | 0.0 | -0.4 | 0.4 | 86.9 | 87.2 | 0.3 | 5.0 | DIFF | Passed | Yes |
| 12/30/2019 05:02 | 0.0 | -0.1 | 0.1 | 86.9 | 85.7 | 1.2 | 5.0 | DIFF | Passed | Yes |
| 12/31/2019 05:02 | 0.0 | -0.3 | 0.3 | 86.9 | 86.0 | 0.9 | 5.0 | DIFF | Passed | Yes |
| 12/31/2019 08:36 | 0.0 | -0.1 | 0.1 | 86.9 | 85.8 | 1.1 | 5.0 | DIFF | Passed | Yes |

Calibration Error: **Failed Test** **Failed Level** Maintenance Limit

Report Generated: 01/22/20 15:22

Report Version 4.0

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Attachment 8: Detailed CEMS Downtime

The Northside Fuel Gas had limit exceedances in the second half of 2019. Therefore, the detailed CEMS downtime report is included in this attachment.

Downtime Events - Duration

Plant: MONROE ENERGY, LLC.
Report Period: 07/01/2019 00:00 Through 12/31/2019 23:59
Time Online Criteria: 1 minute(s)

Source: N_H2S

Parameter: N_H2S

Interval: 001H

| Incident ID | Start Date/Time | End Date/Time | Duration (hh:mm) | Reason Code - Description Action Code - Description |
|-------------------|------------------|------------------|------------------|--|
| 1 | 09/10/2019 09:00 | 09/10/2019 10:59 | 2h - 0m | 08 - NORMAL OPERATION |
| 2 | 09/16/2019 05:00 | 09/16/2019 07:59 | 3h - 0m | 14 - RECALIBRATION |
| 3 | 09/30/2019 05:00 | 09/30/2019 07:59 | 3h - 0m | 08 - NORMAL OPERATION |
| 4 | 10/16/2019 04:00 | 10/16/2019 07:59 | 4h - 0m | 11 - EXCESS DRIFT PRIMARY ANALYZER |
| 5 | 10/25/2019 04:00 | 10/25/2019 06:59 | 3h - 0m | 08 - NORMAL OPERATION |
| 6 | 10/30/2019 10:00 | 10/30/2019 10:59 | 1h - 0m | 11 - EXCESS DRIFT PRIMARY ANALYZER |
| 7 | 10/31/2019 04:00 | 10/31/2019 08:59 | 5h - 0m | 08 - NORMAL OPERATION |
| 8 | 11/02/2019 04:00 | 11/02/2019 07:59 | 4h - 0m | 20 - CORRECTIVE MAINTENANCE |
| 9 | 11/03/2019 04:00 | 11/03/2019 09:59 | 6h - 0m | 08 - NORMAL OPERATION |
| 10 | 12/04/2019 08:00 | 12/04/2019 10:59 | 3h - 0m | 11 - EXCESS DRIFT PRIMARY ANALYZER |
| Number of Events: | | | 10 | 08 - NORMAL OPERATION |
| Total Duration: | | | 34h - 0m | 14 - RECALIBRATION |

* Indicates duration incident could have additional data prior to the start date or following the end date.